

RJ171

APPARATUS AND METHOD FOR PROCESSING AND/OR FOR PROVIDING  
HEALTHCARE INFORMATION AND/OR HEALTHCARE-RELATED INFORMATION

RELATED APPLICATIONS

This application claims the benefit of priority of U.S. Provisional Patent Application Serial No. 60/172,555, filed December 18, 1999, which teaches and discloses an apparatus and method for processing and/or for providing healthcare information and/or healthcare-related information, the subject matter and teachings of which are hereby incorporated by reference herein.

FIELD OF THE INVENTION

The present invention pertains to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information and, in particular, to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information for a variety of healthcare and healthcare related applications.

## BACKGROUND OF THE INVENTION

Each year, tens of millions of individuals seek or need the assistance of healthcare professionals. In order to perform proper diagnoses and to prescribe appropriate treatments, healthcare professional or providers typically rely on information which is obtained from patients, relatives of patients, previous providers, and/or healthcare facility and/or hospital staff members. The need to have accurate and/or up-to-date data and/or information, in providing healthcare services and/or healthcare-related services, cannot be emphasized enough.

Stories constantly emerge about patients receiving the wrong treatments, having the wrong surgical procedures performed on themselves, receiving a drug or drugs which fatally and/or otherwise adversely interact with another drug or drugs, etc., with stories going on and on. Recently, it has been estimated that between 44,000 and 98,000 individuals die, in the United States alone, as the result of errors or mistakes made by doctors, healthcare providers, and/or healthcare facility workers. There is no doubt that many of these deaths result from inaccurate and/or erroneous information and/or the lack of the availability of correct and/or up-to-date information.

Another problem lies with the fact that the main source of patient information, medical histories, family histories, etc., upon which doctors or providers may base their diagnoses and/or treatments, are patients who usually supply this information on questionnaires or forms just prior to seeing the healthcare provider and/or during a preliminary interview with the provider. In this regard, information obtained from these questionnaires or forms, as well as from these preliminary interviews with the providers, may not necessarily result in sufficient, comprehensive, and/or accurate, information being obtained regarding the patient. Further, there is no guarantee that the same information will be provided, in a uniform manner, to a next or different provider. As a result, patient information may not be uniformly distributed and/or be available to providers at the point of treatment and/or otherwise.

Another problem which exists in the current healthcare system is that doctors or other providers do not always have the latest information and/or research material available to them prior to, and/or during, the diagnosis and/or treatment process.

It is also no secret that healthcare costs are rising at ever-increasing rates and that insurance companies and other

healthcare payers expend great resources in processing and reconciling treatment claims and/or claims for healthcare services and/or benefits. Typically, these insurance and/or benefits claims take place in a paper-based environment and, as a result are slow and inefficient. Fraudulent claims and/or claims which cannot be verified pose another major problem for healthcare payers and insurance companies. These problems only serve to add to the growing costs of healthcare, delayed treatments, and a general dissatisfaction with the current healthcare system.

Another problem lies in making up-to-date training materials conveniently available to providers in order to allow providers to remain current with state-of-the-art information and training techniques.

The list of problems with the current healthcare system goes on and on. In view of the above, there is a great need for an apparatus and a method for providing healthcare information and/or healthcare-related information to the various providers, payers, patients, third party individuals, and/or insurance brokers, agents and/or other intermediaries, which overcomes the shortcomings of prior art.



## SUMMARY OF THE INVENTION

The present invention provides an apparatus and methods for providing healthcare information and/or healthcare-related information which overcomes the shortcomings of the prior art.

The present invention is directed to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information and, in particular, to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information for a variety of healthcare and healthcare related applications.

The apparatus and method of the present invention facilitates the creation and management of a comprehensive healthcare processing system which can manage patient and client records, doctor and other provider records, healthcare insurance and/or payer records, and thereby provide an apparatus, system and methods for providing a variety and a multitude of healthcare information processing applications, processes and services.

The present invention facilitates improved healthcare quality, efficient information collection, processing and

dissemination, efficient diagnosis and treatment, cost efficiency, cost containment, as well as many other benefits and advantages as will be described herein. The apparatus and method of the present invention also facilitates the distribution and management of healthcare insurance, life insurance, disability insurance, as well as claims processing related thereto.

The present invention also provides an apparatus and a method for providing a comprehensive processing system which incorporates data and/or information from any combination and/or all of the participants in the healthcare field, including patients, providers, payers or insurance companies, and/or brokers, agents and/or other intermediaries who act on behalf of any of the above-identified persons or entities.

The apparatus of the present invention includes a central processing computer or central processing computer system which can be a network or server computer. The apparatus also includes a healthcare provider communication device or computer which is associated with a healthcare provider such as a healthcare professional, a hospital, a clinic, and/or any other provider of services described herein. The healthcare provider computer(s) can communicate with, and operate in conjunction with, the central processing computer and/or any of the other computers

and/or computer systems or communication devices described herein.

The apparatus can also include a healthcare payer communication device or computer which is associated with a healthcare payer such as a healthcare insurer, insurance company, health maintenance organization, a clinic, and/or any other payer of healthcare services and products described herein. The healthcare payer computer(s) can communicate with, and operate in conjunction with, central processing computer and/or any of the other computers and/or computer systems or communication devices described herein.

The apparatus can also include a patient or individual user communication device or computer which is associated with a healthcare patient such as a patient, user, or client who seeks or who is provided with healthcare and/or related services, products and/or related information. The patient computer(s) can communicate with, and operate in conjunction with, central processing computer and/or any of the other computers and/or computer systems described herein.

The apparatus can also include an intermediary communication device or computer which is associated with an

intermediary, a broker, an agent, and/or any other individual and/or entity, that can utilize the present invention in order to act for and/or on behalf of any other individual, party, or entity, described herein. The intermediary computer(s) can communicate with, and operate in conjunction with, central processing computer and any of the other computers and/or computer systems described herein.

Each of the central processing computer(s), the provider computer(s), the payer computer(s), the patient computer(s), and/or the intermediary computer(s), can transmit information to, as well as receive information from, any of the computers described herein. In this regard, each of the computers can communicate with, process information from, and/or share data and/or information with, each other and/or any other computer or computers described herein and/or utilized in conjunction with the present invention. In this manner, data and/or information transfer between any of the computers can take place in a bi-directional manner.

The central processing computer(s), the provider computer(s), the payer computers(s), the patient computer(s), and the intermediary computer(s), can communicate with one another, and/or be linked to one another, over a communication network, a

telecommunication network, a telephone network, a line-connected network, and/or a wireless communication network.

The present invention can be utilized on, or over, the Internet and/or the World Wide Web and/or on, or over, any other communication network or system, including, but not limited to, a communication network or system, a telecommunication network or system, a telephone communication network or system, a cellular communication network or system, a wireless communication network or system, a wireless Internet network or system, a wireless World Wide Web network or system, a line or wired communication network or system, a digital communication network or system, a personal communication network or system, a personal communication services (PCS) network or system, a satellite communication network or system, a broad band communication network or system, a low earth orbiting (LEO) satellite network or system, a public switched telephone network or system, a telephone communication network or system, a radio communication network or system, and/or any other communication network or system, and/or any combination of the above communication networks or systems.

The apparatus and method of the present invention can utilize electronic commerce technologies and security methods,

techniques and technologies, in any and/or all of the instances of data and/or information processing, and/or data and/or information transmission described herein.

Each of the central processing computer(s), as well as each of the computers or communication devices associated with each of the herein-described users, patients, providers, payers, and/or intermediaries, can include a central processing unit or CPU, a random access memory device(s) (RAM), a read only memory device(s), and a user input device. Each of the central processing computer(s), as well as each of the computers or communication devices associated with each of the herein-described users, patients, providers, payers, and/or intermediaries, can also include a display device, a transmitter(s), a receiver, a database(s), and an output device. The database(s) can contain any and/or all of the data and or information which is needed to perform the various processing methods, services, functions and/or operations, described herein.

The apparatus and method of the present invention can be utilized in numerous preferred embodiments in order to provide a vast array of healthcare and healthcare-related services for any one or more of the various parties described herein. Any patient, user, provider, payer, and/or intermediary, may utilize

the present invention in the same, similar and/or analogous manner.

The present invention can be utilized for a number of applications, including, but not limited to, determining and/or ascertaining a medical or healthcare diagnosis, verifying and/or checking a diagnosis or treatment, or performing a self-diagnosis. The present invention can be utilized by any of the parties described herein.

The present invention can perform a diagnosis from data and/or information which can be entered by a user or provider, from data and/or information which can be obtained from medical or healthcare devices, machines, and/or equipment, and/or from data and/or information which can be entered by a user or provider in conjunction with, or along with, data and/or information which can be obtained from medical or healthcare devices, machines, and/or equipment.

The present invention can be utilized to create and maintain comprehensive patient databases which can be accessed via a network environment and/or otherwise, to perform healthcare and/or healthcare-related diagnoses, to provide healthcare and/or healthcare-related expected prognoses, to provide healthcare

and/or healthcare-related treatment plans or programs, and/or to provide healthcare and/or healthcare-related treatment progress reports and/or evaluations.

The present invention can also be utilized in order to provide training and continuing education services for healthcare and/or healthcare-related professionals, to provide healthcare, healthcare-related, and/or wellness information, to provide information about healthcare and/or healthcare-related patient, providers, payers, and/or intermediaries, to provide scheduling management services for providers, to provide notification services for patients, providers, payers and/or intermediaries, and/or any other parties described herein, and/or to locate providers, payers and/or intermediaries.

The present invention can also be utilized in order to provide healthcare and/or healthcare-related claim processing services, claims submissions, claim processing, claim status checking, and claim reconciliation, claim fraud prevention, treatment evaluation, healthcare and/or healthcare insurance policy generation, management and administration, provider, payer and/or intermediary evaluation, drug and/or treatment interactivity, treatment, medication and/or organ availability and/or notification services, patient, provider, payer,



intermediary and/or third party, notification services. The present invention can also be utilized as a clearinghouse for facilitating the offering, selling, buying, trading, and/or other commerce and/or transactions, involving healthcare and/or healthcare-related services, products and/or goods.

The various computers and/or communication devices can be utilized to transmit and/or to receive transmissions, information, messages, and/or notification messages and/or signals, to and/or between, the respective parties associated with the respective computers and/or communication devices. The transmission of information, messages, and/or notification messages and/or signals can be effected via any one or more of e-mail messages, telephone messages, beeper or pager messages, physical mail delivery, electronic data transmission, and/or can be made via any other suitable and/or appropriate communication method and/or technique.

The present invention can be utilized in order to perform a diagnosis of a sickness, illness and/or other condition. The present invention can also be utilized to ensure that a proper treatment and/or procedure is performed on the patient, and/or to ensure that a subsequent treatment and/or treatments are performed as prescribed. The present invention can also be

utilized in order to prevent medical and/or surgical mistakes, mishaps and/or other instances when improper treatment could occur.

The present invention can also be utilized to allow a subsequent care provider to re-evaluate a patient's condition and/or records and to seek additional assistance for the patient, and/or to perform a separate and independent assessment and/or diagnosis of the patient.

The present invention can also be utilized in order to access a patient's or a client's record(s) and input information concerning the treatment and/or procedure to be performed. Thereafter, the present invention can provide notification to a healthcare professional that the treatment and/or procedure may be a prescribed treatment or procedure or a non-prescribed treatment and/or procedure.

Any and/or all processing described herein can be performed in conjunction with a patient's medical history, family history, allergic conditions information, and/or with any other information deemed important and/or essential in the an individual's healthcare diagnoses and/or treatments.

The present invention can also be utilized to perform treatment evaluations and/or treatment monitoring so as to allow for an evaluation and/or a monitoring of treatment and/or for providing training for healthcare providers and/or professionals. The present invention can also be utilized in order to allow payer and/or insurance companies to evaluate treatments, treatment plans, treatment progress, and/or any other evaluations and/or verifications for healthcare claims processing.

The present invention can provide treatment evaluation and/or monitoring for healthcare payers which can be utilized for performing claims processing, provider evaluations, patient evaluations, and/or any other useful and/or desired purpose.

The present invention can also be utilized to create and maintain a comprehensive patient healthcare database which can be accessed by any provider, payer, intermediary, and/or other party or user, in order to access the patient's healthcare files and/or records. The comprehensive database can provide data and/or information source which can be accessed by any provider, from anywhere in the world, and at any time, in order to obtain information about a patient in his, her, or its care. Payers can also utilize the comprehensive database in order to ascertain

payment eligibility, the existence of pre-existing conditions and/or to obtain any other useful information.

The present invention can also be utilized in order to find and/or to locate providers and/or payers of, and for, respectively, various healthcare treatments, healthcare services and/or healthcare goods or products and/or healthcare-related goods or products. The present invention can also be utilized to find a payer or insurance company for providing desired coverage and/or for paying for certain treatments and/or procedures.

The present invention can also be utilized to find and/or locate supplies, body organs, blood, medications, and/or any other goods, products, and/or supplies, etc. The present invention can also be utilized by intermediaries, such as insurance brokers, who need to find certain insurance companies and/or payers who meet the needs of certain patients and/or clients, and/or other individuals and/or third parties.

The present invention can also be programmed to provide notification of the availability of a provider, the emergence of a patient in need of a certain care, the availability of a payer or an insurance company to offer a policy or a certain policy, the availability of a healthcare facility to provide certain

care, the availability of certain supplies, a body organ, a blood type, an expiration of an insurance policy (i.e. healthcare insurance, life insurance, disability insurance, etc.,) and/or the occurrence of any event which may be of interest to any of the patients, users, providers, payers, and/or intermediaries, described herein.

The present invention can also be utilized to schedule appointments with any of the patients, providers, payers, and/or intermediaries, described herein.

The present invention can be utilized by intermediaries, such as, but not limited to brokers, insurance brokers, agents, and others, in order to service their respective clients. The present invention can be utilized to prepare policy quotes, to compare available policies, to generate and/or underwrite policies, and to service policy claims. In this, manner, the present invention can provide a platform for allowing a broker to provide improved services to his or her clients while also providing for a more paperless working relationship.

The present invention can also be utilized to process healthcare claims. The present invention can allow any of the patients, providers, payers, users, and/or intermediaries, to

file claims with the respective party electronically and/or otherwise. The present invention can provide for the processing, tracking and reconciliation, of any and/or all healthcare claims and/or healthcare-related claims.

The present invention can also be utilized to notify any party described herein, as well as any third parties, regarding any event, happening, occurrence, and/or any aspect of any claim submission and/or processing activities.

The present invention can also provide for automatic claim submission via the central processing computer once a final diagnosis and treatment has been prescribed by a provider and/or upon the occurrence of an examination and/or the administration of a treatment.

The present invention can also be utilized, in the manner described above in connection with claiming healthcare insurance benefits, disability insurance benefits, and/or life insurance benefits.

The present invention can also be utilized to administer and/or maintain financial accounts for, and/or on behalf of, any of the patients, users, providers, payers, and/or intermediaries,

described herein. The present invention can maintain detailed records of any and/or all of such transfers and/or transactions and provide periodic account statements to the respective parties maintaining accounts with the present invention.

The apparatus and method of the present invention can also utilize electronic signatures and/or process electronic signatures and/or electronic signature information which can correspond to any of the herein-described parties in performing any of the herein-described processing routines and/or functions.

The apparatus and method of the present can also be utilized as a healthcare training simulator for any of the providers, healthcare providers, healthcare professionals, and/or other providers described herein. The present invention can also be utilized by any user and/or individual wishing to learn about a certain healthcare field or topic. Data and/or information collected and/or stored by the apparatus, which relates to symptoms and/or conditions, as well as responses to treatments, can be utilized in order to present realistic and confidential training scenarios.

The present invention can also provide for the security and/or the confidentiality of any and/or all of the data and/or

information stored by, and/or processed by, same. Identification cards can also be utilized so as to store pertinent information for any of the respective parties so as to provide the respective party with access to various data and/or information and/or any processing functionality which can be provided by the present invention.

The present invention can also utilize intelligent agents, software agents, and/or mobile agents, which agents can be programmed to act for, and/or on behalf of, any of the parties described herein. The intelligent agent(s) can act on behalf of the respective party in various related interactions and/or other activities which are described as being performed herein and/or which may be incidental and/or related thereto. Therefore, the present invention also provides an agent-based apparatus and method for providing healthcare information and/or healthcare-related information.

The apparatus of the present invention can also be programmed to be self-activating and/or activated automatically. The apparatus of the present invention can also be programmed in order to automatically generate and/or transmit any of the e-mails, electronic message transmissions, electronic notification transmissions, and/or any of the communications, described



herein, between any of the parties which utilize the present invention.

The data and/or information, described as being stored in the various databases utilized by the respective computers and/or communication devices can be continuously updated so as to store the latest values for the data and/or information and can be stored and be made available for future processing routines.

Any and/or all of the data and/or information described herein as being stored in any of the various databases, can be linked via relational database techniques and/or via any appropriate database management techniques. The data and/or information can be updated via inputs from any of the computers and/or communication devices described herein, and/or external computers or communication devices, in real-time, and/or via dynamically linked database management techniques. The data and/or information which is stored in the various databases can be linked via any suitable data linking techniques such as, for example, dynamically linked lists (DLLs), linked lists, and object links embedded (OLE's).

Accordingly, it is an object of the present invention to provide an apparatus and a method for processing and/or for

providing healthcare information and/or healthcare-related information.

It is another object of the present invention to provide an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information, in a network environment.

It is still another object of the present invention to provide an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information, which can be utilized in a number of healthcare and/or healthcare-related applications.

It is yet another object of the present invention to provide an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information, which provides and/or facilitates the creation and management of a comprehensive healthcare processing system.

It is another object of the present invention to provide an apparatus and a method for performing healthcare diagnoses.

It is still another object of the present invention to provide an apparatus and method for performing a healthcare diagnosis from data and/or information which can be entered by a user or provider.

It is yet another object of the present invention to provide an apparatus and method for performing a healthcare diagnosis from data and/or information which can be obtained from medical or healthcare devices, machines, and/or equipment.

It is another object of the present invention to provide an apparatus and method for performing a healthcare diagnosis from data and/or information which can be entered by a user or provider in conjunction with, or along with, data and/or information which can be obtained from medical or healthcare devices, machines, and/or equipment.

It is still another object of the present invention to provide an apparatus and a method for performing healthcare diagnoses, in a network environment.

It is yet another object of the present invention to provide an apparatus and a method for prescribing healthcare treatments.

It is another object of the present invention to provide an apparatus and a method for prescribing healthcare treatments, in a network environment.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can incorporate data and/or information from any combination and/or all of the participants in the healthcare field, including patients, users, providers, payers or insurance companies, and/or brokers, agents and/or other intermediaries who act on behalf of any of the above-identified persons or entities.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized by a healthcare professional to verify and/or to check a diagnosis.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized by an individual to perform a self-diagnosis.

It is still another object of the present invention to

provide an apparatus and a method for providing healthcare information which can be utilized to create and/or to maintain a comprehensive patient database which can be accessed to perform any one or more of healthcare and/or healthcare-related diagnoses, to provide healthcare and/or healthcare-related expected prognoses, to provide healthcare and/or healthcare-related treatment plans or programs, and/or to provide healthcare and/or healthcare-related treatment progress reports and/or evaluations.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized as a healthcare training simulator.

It is another object of the present invention to provide an apparatus and a method for providing healthcare training.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide scheduling management services for providers, payers, providers, users, and/or intermediaries.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information

which can be utilized to provide notification services for patients, providers, payers, users, and/or intermediaries,

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to locate providers, payers, patients, users, and/or intermediaries.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide healthcare claim processing services.

It is yet another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide healthcare claim processing services, including any one or more of claims submissions, claim processing, claim status checking, claim reconciliation, and/or claim fraud prevention.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide healthcare treatment evaluation.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide healthcare insurance policy generation, policy management, and/or policy administration.

It is yet another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide provider, payer, and/or intermediary evaluation.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide information regarding drug and/or treatment interactivity, and/or treatment, medication, and/or organ availability.

It is another object of the present invention to provide an apparatus which can be utilized as a clearinghouse for facilitating the offering, selling, buying, trading, and/or other commerce and/or transactions, involving healthcare and/or healthcare-related services, products and/or goods.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to ensure that a proper treatment(s) or procedure(s) is prescribed for a patient and/or that a proper treatment and/or procedure is administered to, or performed on, a patient.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to access a patient's or a client's record(s) and/or to obtain information concerning a treatment and/or a procedure to be performed.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide healthcare diagnoses in conjunction with a patient's medical history, family history, allergic conditions information, and/or with any other information deemed important and/or essential in the an individual's healthcare diagnosis and/or treatment.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to allow payers and/or



insurance companies to evaluate treatments, treatment plans, treatment progress, and/or any other evaluations and/or verifications, for healthcare claims processing.

It is yet another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to allow providers or payers to evaluate treatments, treatment plans, treatment progress, and/or any other evaluations and/or verifications, claims processing for providing healthcare and/or related services.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to find and/or locate supplies, body organs, blood, medications, and/or any other goods, products, and/or supplies, etc.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to find and/or locate a payer or insurance company for providing desired coverage and/or for paying for certain treatments and/or procedures.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized by intermediaries, such as insurance brokers, to find and/or locate insurance companies and/or payers who meet the needs of certain parties.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be programmed to provide notification of the availability of a provider, the emergence of a patient in need of a certain care, the availability of a payer or an insurance company to offer a policy or a certain policy, the availability of a healthcare facility to provide certain care, the availability of certain supplies, a body organ, a blood type, an expiration of an insurance policy, and/or the occurrence of any event which may be of interest to patients, users, providers, payers, and/or intermediaries.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to prepare insurance policy quotes, compare available policies, generate policies, and service policy claims.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide for automatic healthcare claim submission.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to provide for automatic healthcare claim submission once a final diagnosis has been determined and/or a treatment has been prescribed.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to claim healthcare insurance benefits, disability insurance benefits, and/or life insurance benefits.

It is yet another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to administer and/or maintain financial accounts for, and/or on behalf of, any of the patients, users, providers, payers, and/or intermediaries, described herein.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can provide for the security and/or the confidentiality of any data and/or information concerning patients, users, providers, payers, and/or intermediaries.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized in conjunction with identification cards which are utilized to store information regarding patients, providers, payers, users, and/or intermediaries.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized in conjunction with intelligent agents, software agents, and/or mobile agents.

It is yet another object of the present invention to provide an apparatus and a method for providing healthcare information which can be programmed to be self-activating and/or activated automatically.

It is another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized to automatically generate and/or transmit any of the e-mails, electronic message transmissions, electronic notification transmissions, and/or any of the communications, described herein, between any of the parties which utilize the present invention.

It is still another object of the present invention to provide an apparatus and a method for providing healthcare information which can be utilized in conjunction with various electronic commerce technologies and/or security methods, techniques and technologies.

It is yet another object of the present invention to provide an apparatus and method for providing healthcare information which can utilize electronic signatures and/or process electronic signatures and/or electronic signature information in performing any of the herein-described processing routines and/or functions.

Other objects and advantages of the present invention will be apparent to those skill in the art upon a review of the

Description of the Preferred Embodiment, taken in conjunction with the Drawings which follow.

BRIEF DESCRIPTION OF THE DRAWINGS

In the Drawings:

Figure 1 illustrates a preferred embodiment of the present invention, in block diagram form;

Figure 2 illustrates the central processing computer of Figure 1, in block diagram form;

Figure 3 illustrates the provider communication device of Figure 1, in block diagram form;

Figure 4 illustrates the payer communication of Figure 1, in block diagram form;

Figure 5 illustrates the patient communication device of Figure 1, in block diagram form;

Figure 6 illustrates the intermediary communication device of Figure 1, in block diagram form;

Figures 7A and 7B illustrate a preferred embodiment method of using the present invention, in flow diagram form;

Figures 8A and 8B illustrate another preferred embodiment method of using the present invention, in flow diagram form;

Figures 9A and 9B illustrate still another preferred embodiment method of using the present invention, in flow diagram form;

Figure 10 illustrates yet another preferred embodiment method of using the present invention, in flow diagram form;

Figures 11A and 11B illustrate another preferred embodiment method of using the present invention, in flow diagram form;

Figures 12A and 12B illustrate still another preferred embodiment method of using the present invention, in flow diagram form;

Figures 13A, 13B and 13C illustrate yet another preferred embodiment method of using the present invention, in flow diagram form;

Figures 14A and 14B illustrate another preferred embodiment method of using the present invention, in flow diagram form; and

Figures 15A and 15B illustrate another preferred embodiment method of using the present invention, in flow diagram form.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is directed to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information and, in particular, to an apparatus and a method for processing and/or for providing healthcare information and/or healthcare-related information for a variety of healthcare and healthcare related applications.

The apparatus and method of the present invention facilitates the creation and management of a comprehensive healthcare processing system which can manage patient and client



records, doctor and other provider records, healthcare insurance and/or payer records, and thereby provide an apparatus, system and methods for providing a variety and a multitude of healthcare information processing applications, processes and services.

The present invention facilitates improved healthcare quality, efficient information collection, processing and dissemination, efficient diagnosis and treatment, cost efficiency, cost containment, as well as many other benefits and advantages as will be described herein.

The apparatus and method of the present invention also facilitates the distribution and management of healthcare insurance, life insurance, disability insurance, as well as claims processing related thereto.

The present invention also provides an apparatus and a method for providing a comprehensive processing system which incorporates data and/or information from any combination and/or all of the participants in the healthcare field including, but not limited to, patients and those seeking healthcare, healthcare providers, doctors, including medical doctors, surgeons, physicians, dentists, psychologists, optometrists, podiatrists, osteopaths, chiropractors, pharmacists, therapists, physical

therapists, respiratory therapists, nurses, healthcare aids, nutritionists, and/or any other person, individual and/or professional who can provide healthcare, healthcare-related, wellness and/or wellness-related services and/or products, insurance companies, healthcare insurance companies, disability insurance companies, casualty insurance companies, health maintenance organizations, healthcare providers, and any other payer and/or provider of healthcare services and/or products, healthcare claims processing centers, healthcare insurance brokers and/or agents , and/or any other third party and/or intermediary who or which acts on behalf of another and/or assists in to providing of healthcare and/or related services.

Applicant hereby incorporates by reference herein the subject matter and teachings of U.S. Provisional Patent Application Serial No. 60/172,555 which teaches and discloses an apparatus and method for processing and/or for providing healthcare information and/or healthcare-related information.

Applicant also hereby incorporates by reference herein the subject matter of U.S. Patent Application Serial No. 09/162,889 which teaches an apparatus and method for processing healthcare data. Applicant also hereby incorporates by reference

herein the subject matter of U.S. Patent No. 5,961,332 which teaches an apparatus for processing psychological data and method of use thereof.

As used herein, the terms "individual", "patient", "client", "user" or the like, or their plural forms, refers to any person, individual, patient, and/or client who uses the present invention, and/or who seeks and/or who receives healthcare services, healthcare-related services, healthcare-related information, and/or any of the other services and/or products provided by the present invention.

As used herein, the terms "doctor", "healthcare provider", "provider", "therapist", "healthcare information specialist", etc., or their plural forms, refers to any medical doctor, including any and all of the various medical specialists and/or specialties, including, but not limited to internists, orthopedists, opthamalogists, cardiologists, hematologists, endocrinologists, oncologists, ears, nose and throat specialists, neurologists, urologists, gastrointerologists, dermatologists, pediatricians), medical specialist, surgeon, surgical specialists, including any and/or forms and/or types of surgeons), physician, dentist, psychiatrist, psychologist, optometrist, podiatrist, osteopath, chiropractor, pharmacist,

therapist, physical therapist, respiratory therapist, nurse, healthcare aid, nutritionist, and/or any other person, individual and/or professional who can provide healthcare, healthcare-relate, wellness and/or wellness-related services and/or products.

As used herein, the terms "insurer", "payer", "insurance provider", "heath insurance provider", "life insurance provider", "disability insurance provider", etc., or their plural forms, refers to any insurance companies, healthcare insurance companies, disability insurance companies, casualty insurance companies, health maintenance organizations, healthcare providers, and any other payer and/or provider of healthcare services and/or products, who which provide and/or pay for healthcare and/or healthcare-related benefits, services, and/or products, and/or who or which provide respective health insurance, life insurance and/or disability insurance benefits, services and/or products.

As used herein, the terms "broker", "agent", "billing service", "collection agent", "manager", intermediary", "assistant", etc., or their plural forms, refer to any broker, insurance broker, agent, insurance agent, intermediary, third party, billing service provider, collection agent, claim

processing agent, and/or any other person, individual, and/or entity, which acts on behalf of, or for, any of the individuals, patients, doctors, healthcare providers, insurers, payers, etc., described herein.

Figure 1 illustrates the apparatus of the present invention, in block diagram form. The apparatus of the present invention is denoted generally by the reference numeral 100. In the preferred embodiment, the apparatus 100 of the present invention includes a central processing computer or central processing computer system 10 (hereinafter referred to as the "central processing computer 10"). In the preferred embodiment the central processing computer 10 can be a network or server computer.

In the preferred embodiment, the central processing computer 10 can provide control over the apparatus 100 and can perform any of the various processing services and/or functions described herein. The central processing computer 10 may be a single computer or system of computers and/or may be include a plurality of computers or computer systems which are utilized in conjunction with one another. The central processing computer 10, in the preferred embodiment can provides services for any of the other computers and/or computer systems described herein as

being associated with any of the individuals, patients, healthcare providers, insurers, payers, brokers, agents, and/or intermediaries, described herein.

The apparatus 100 also includes a healthcare provider communication device or computer 20 (hereinafter referred to as "provider communication device 20" or "provider computer 20") which is associated with a healthcare provider such as a healthcare professional, a hospital, a clinic, and/or any other provider of services described herein. Any number or amount of healthcare provider computers 20 can be utilized in conjunction with a healthcare provider and/or group of providers. The healthcare provider computer(s) 20 can communicate with, and operate in conjunction with, the central processing computer 10 and/or any of the other computers and/or computer systems associated with any of the other individuals and/or entities which utilize and/or operate in conjunction with the present invention.

The apparatus 100 can also include a healthcare payer communication device or computer 30 (hereinafter referred to as "payer communication device 30" or "payer computer 30") which is associated with a healthcare payer such as a healthcare insurer, insurance company, health maintenance organization, a clinic,

and/or any other payer of healthcare services and products described herein. Any number or amount of healthcare payer computers 30 can be utilized in conjunction with a healthcare payer and/or group of payers. The healthcare payer computer(s) 30 can communicate with, and operate in conjunction with, central processing computer 10 and/or any of the other computers and/or computer systems associated with any of the other individuals and/or entities which utilize and/or operate in conjunction with the present invention.

The apparatus 100 can also include a patient or individual user communication device or computer 40 (hereinafter "patient communication device 40" or "patient computer 40") which is associated with a healthcare patient such as a patient, user, or client who seeks or who is provided with healthcare and/or related services, products and/or related information. The patient communication device 40 can also be utilized by any individual, party, or entity, who or which may merely utilize the present invention in order to obtain information of interest.

A patient communication device 40 may also be located at public places or locations, such as at kiosks or other publicly available computer or communication devices. Any number or amount of patient computers 40 can be utilized in conjunction

with a patient and/or group of patients. The patient computer(s) 40 can communicate with, and operate in conjunction with, the central processing computer 10 and/or any of the other computers and/or computer systems associated with any of the other individuals and/or entities which utilize and/or operate in conjunction with the present invention.

The apparatus 100 can also include an intermediary communication device or computer 50 (hereinafter referred to as "intermediary communication device 50" or "intermediary computer 50") which is associated with an intermediary, a broker, an agent, and/or any other individual and/or entity, that can utilize the present invention in order to act for and/or on behalf of any other individual, party, or entity, described herein. Any number or amount of intermediary computers 50 can be utilized in conjunction with an intermediary and/or group of intermediaries. The intermediary computer(s) 50 can communicate with, and operate in conjunction with, the central processing computer 10 and any of the other computers and/or computer systems associated with any of the other individuals and/or entities which utilize and/or operate in conjunction with the present invention.

In the preferred embodiment, any of the provider



computer(s) 20, the payer computer(s) 30, the patient computer(s) 40, and/or the intermediary computer(s) 50, can be any computer or communication device, including, but not limited to, a personal computer, a home computer, a server computer, a network computer, a hand-held computer, a palmtop computer, a laptop computer, a personal communication device, a personal digital assistant, a telephone, a digital telephone, a television, an interactive television, a beeper, a pager, and/or a watch.

Each of the central processing computer(s) 10, the provider computer(s) 20, the payer computer(s) 30, the patient computer(s) 40, and/or the intermediary computer(s) 50, can transmit information to, as well as receive information from, any of the computers 10, 20, 30, 40, and 50, described herein. In this regard, each of the computers 10, 20, 30, 40, and 50, can communicate with, process information from, and/or share data and/or information with, each other and/or any other computer or computers 10, 20, 30, 40, and 50, described herein and/or utilized in conjunction with the present invention. In this manner, data and/or information transfer between any of the computers 10, 20, 30, 40, and 50, can communicate with any other computer or computers 10, 20, 30, 40, and 50, in a bi-directional manner.

The central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, can communicate with one another, and/or be linked to one another, over a communication network, a telecommunication network, a telephone network, a line-connected network, and/or a wireless communication network. Each of the computers 10, 20, 30, 40, and 50, can be linked with any other computer or computers directly or indirectly directly or indirectly with one another so as to facilitate a direct or indirect bi-directional communication said respective computers.

In the preferred embodiment, the present invention is utilized on, and/or over, the Internet and/or the World Wide Web. The present invention, in the preferred embodiment, can also utilize wireless Internet and/or World Wide Web services, equipment and/or devices. The central processing computer(s) 10, in the preferred embodiment, has a web site or web sites associated therewith.

Although the Internet and/or the World Wide Web is a preferred communication system and/or medium utilized, the present invention, in all of the embodiments described herein, can also be utilized with any appropriate communication network

or system including, but not limited to, a communication network or system, a telecommunication network or system, a telephone communication network or system, a cellular communication network or system, a wireless communication network or system, a line or wired communication network or system, a wireless Internet network or system, a wireless World Wide Web network or system, a digital communication network or system, a personal communication network or system, a personal communication services (PCS) network or system, a satellite communication network or system, a broad band communication network or system, a low earth orbiting (LEO) satellite network or system, a public switched telephone network or system, a telephone communication network or system, a radio communication network or system, and/or any other communication network or system, and/or any combination of the above communication networks or systems.

In the preferred embodiment, each of the central processing computer(s) 10, the provider computer(s) 20, the payer computer(s) 30, the patient computer(s) 40, and intermediary computer(s), can transmit data and/or information using TCP/IP, as well as any other Internet and/or World Wide Web, and/or communication, protocols.

The apparatus 100 of the present invention can utilize electronic commerce technologies and security methods, techniques and technologies, in any and/or all of the instances of data and/or information processing, and/or data and/or information transmission described herein.

Figure 2 illustrates the central processing computer 10, in block diagram form. The central processing computer 10, in the preferred embodiment, is a network computer or computer system, or any other communication device which can provide the functionality of, and which can be utilized as a central processing computer such as an Internet server computer and/or a web site server computer. In the preferred embodiment, the central processing computer 10 includes a central processing unit or CPU 10A, which in the preferred embodiment, is a microprocessor. The CPU 10A may also be a microcomputer, a minicomputer, a macro-computer, and/or a mainframe computer, depending upon the application.

The central processing computer 10 also includes a random access memory device(s) 10B (RAM) and a read only memory device(s) 10C (ROM), each of which is connected to the CPU 10A, a user input device 10D, for entering data and/or commands into the central processing computer 10, which includes any one or more of

a keyboard, a scanner, a user pointing device, such as, for example, a mouse, a touch pad, and/or an audio input device and/or a video input device, and/or any device, electronic and/or otherwise which can be utilized for inputting and/or entering healthcare data and/or information, for example pulse rate monitors, blood pressure monitors, electrocardiograms, blood-sugars monitors, etc., if desired, which input device(s) are also connected to the CPU 10A. The central processing computer 10 also includes a display device 10E for displaying data and/or information to a user or operator.

The central processing computer 10 also includes a transmitter(s) 10F, for transmitting signals and/or data and/or information to any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50 individual computer(s), which may be utilized in conjunction with the present invention. The central processing computer 10 also includes a receiver 10G, for receiving signals and/or data and/or information from any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, which may be utilized in conjunction with the present invention.

The central processing computer 10 also includes a database(s) 10H which contains data and/or information pertaining to the patients, providers, payers, and intermediaries who or which are serviced by the present invention and/or who or which utilize the present invention.

The database 10H can contain any and/or all of the information needed and/or required in order to perform any and/or all of the functions, services and/or operations described herein as being performed by the central processing computer 10 or the apparatus 100 of the present invention. In this regard the database 10H can contain data and/or information regarding patient name, patient identification information, patient social security number or other identification information, date of birth, doctors or providers, therapists, nutritionists, insurance or payer information, group insurance information, group health insurance information, life insurance information, disability insurance information, patient address, phone number, e-mail and/or other contact information, medical history, psychological history, dental history, family history, family medical, psychological, and/or dental history, insurance coverage, insurance co-payment and/or deductible information, insurance information, insurance claim procedures, insurance claim forms,

doctor or provider appointment schedules, past treatments, past diagnosis, symptoms, insurance claim forms, employer information, lifestyle information, treatment plans, treatment progress, broker/agent/intermediary information, education information, age, sex, marital status, employee benefits information, types or services and/or treatments needed, and any other data and/or information regarding the patient which would be needed and/or desired in order to perform any and/or all of the functions, services and/or operations described herein.

The database(s) 10H can also contain healthcare and/or medical video, image, and/or audio, data and/or information, such as, for example, x-rays, Magnetic Resonant Images (MRI), CAT scans, digital x-ray files, digital Magnetic Resonant Imaging (MRI) files, digital CAT scan files, and/or any other video, imaging, and/or audio, healthcare data and/or information which can be utilized by healthcare providers, payers, intermediaries, patients, and/or other users of the present invention. In this manner, the present invention can facilitate the availability of any of the above-described video, image, and/or audio, data and/or information in a network environment. For example, a medical specialist can have access to, and/or review, an MRI or a CAT scan for a patient, from any location and at any time.

The database 10H can also contain data and/or information regarding providers including provider name, provider social security number or identification number, type of professional or service provider, address, phone number, fax number, e-mail and/or other contact information, experience, specialties, insurances accepted, schedule of charges, financial account identification information, resume information, education, work experience, claim forms, appointment schedules, procedures performed, and/or any other data and/or information concerning the providers for providing any and/or all of the functions, services, and/or operations described herein as being performed by the present invention.

The database 10H can also contain data and/or information regarding all possible fields of medicine, surgery, psychiatry, psychology, dentistry, oral surgery, optometry, podiatry, physical therapy, respiratory therapy, hypnosis, osteopathy, nutrition, wellness, and/or any other possible healthcare fields and/or subject matter which can possibly be utilized in the processing and/or operation of the present invention.

The database 10H can also contain information on illnesses, symptoms, diseases and/or sicknesses, theories, scientific theories, research data and/or information, diagnosis



information, treatment information, treatment plans, treatment processes, treatment progresses, treatment interactions, side effects, expected treatment results, treatment providers, treatment durations, treatment costs, pre-treatment information, post-treatment information, treatment monitoring information, statistical information regarding diagnoses, treatments, treatment success rates, treatment failure rates, treatment centers, therapy plans, therapy success rates, therapy failure rates, treatment procedures, medications treatments, non-medication treatments, healthcare institutions, treatment evaluating criteria, treatment mistakes and/or mishaps, indicators of mistakes and/or mishaps, corrective actions, links to providers, links to treatment centers or institutions, reimbursement rates, nutrition information, diet information, exercise information, exercise routines, treatment options, healthcare advise, wellness advice, preventive care, preventive procedure, health maintenance, drug and medication information, drug interaction information, video information, including video files or clips and other information, regarding illnesses, diseases, treatments and follow-up care, audio information, including audio files or clips and other information, regarding illnesses, diseases, treatments and follow-up care, treatment and/or procedure information and/or narratives, treatment analysis, diagnosis analysis, diagnosis monitoring, diagnosis

confirmation and/or checking, and/or other information for providing the herein-described functions, services, and/or operations.

The database 10H can also contain information regarding the insurance companies and payers described herein, including, but not limited to, payer name, address, phone number, fax number, e-mail address, identification number(s), coverage types, policies and/or coverages provided, reimbursement rates, patients and/or providers serviced and/or covered by the payer, policy information, claim forms, claim procedures, claim status, claim processing information, claim submission procedures and policies, reasonable and customary charges, co-payment information, pre-approval information and/or procedures, claim form information, electronic form claim forms, insurance and/or coverage requirements, guidelines, and/or triggering events, covered procedures and/or treatments, uncovered procedures and/or treatments, claim approval information, claim approval history, claim approval statistics, claim rejection or denial information, claim rejection or denial history, claim rejection or denial statistics, financial account information, network provider information, network patient information, claim statistics, preventative care and/or benefits information, benefits information, benefits request information and/or claim forms,

claim submission information, claim processing information, claim status information, payment information and statistics, and/or any other data and/or information regarding and/or related to payers which are needed and/or desired for providing any and/or all of the functions, services, and/or operations described herein.

The database 10H can also contain data and/or information regarding the brokers, agents and/or intermediaries described herein, including, but not limited to, intermediary name, address, phone number, fax number, e-mail address, clients, patients services, insurance policies, policy information, policy quote information, policy proposal information, any and/or all of the above information described herein regarding patients, providers, payers, etc. which may be of interest to the intermediaries described herein which may be useful and/or beneficial to the intermediaries in providing any of the functions, services, and/or operation described herein.

The database 10H can also contain contact information such as phone numbers, fax numbers, pager numbers, beeper numbers, e-mail addresses, hyperlinks to, and/or any other information which can facilitate contact between any of the parties described herein. The database 10H also includes electronic signature data

and/or information for any of the parties, patients, providers, payers, and/or intermediaries, described herein for facilitating transactions, claim submissions, financial transactions, etc., by and/or between any of the above patients, providers, payers, and/or intermediaries.

The data and/or information in the database 10H can also include links to any other information, information sources, news sources, and/or other information and/or data which can or may be utilized by the present invention and/or by any of the patients, providers, payers, intermediaries and/or any other users of the present invention.

The database 10H can also contain data and/or information regarding healthcare news, healthcare developments, healthcare discoveries, etc., for and including the medical field, surgical field, psychological field, dental field, nutrition field, fitness field, etc., and/or any other healthcare field or fields.

The database 10H, in the preferred embodiment, can also contain video and/or audio files which can be utilized for training of healthcare professionals as well as for providing general information to any user of the present invention. In this manner, and as will be described hereinbelow, the apparatus

100 can be utilized as a simulator for providing training in medical diagnosing, medical training, surgical training, psychiatric training, psychological training, dental training, oral surgery training, therapist training, and/or for training any of the healthcare providers described herein and/or envisioned.

For example, the present invention can be utilized to provide a medical doctor with a set of symptoms, evaluate the diagnosis and treatment prescribed and provide follow-up patient conditions which may or may not call for the medical doctor to re-evaluate his or her diagnosis and/or treatment. In a similar fashion, the present invention can be used for training and continuing education and training for any of the healthcare providers described herein and/or otherwise envisioned utilizing the present invention.

The database 10H can also contain data and/or information restricting access by any of the providers, payers, patients, intermediaries, and/or other users, to any of the data and/or information stored in the database 10H.

The database 10H can also contain information correlating symptoms and/or conditions with diagnoses, prognoses, and/or

treatments, treatment methods, procedures, etc. The database 10H also contains any and/or all information needed and/or desired for facilitating the processing of symptoms, conditions, medical histories, family histories, and other information, in order to arrive at diagnoses and/or prognoses, treatments, prescriptions, procedures and/or any other healthcare and/or healthcare-related information.

The database 10H can also contain statistical and/or other probabilistic and/or mathematical information for assigning and/or correlating certain levels and/or estimates for any and/or all of the information, diagnoses, prognoses, treatments, procedures, and/or any other information processed and/or generated by the central processing computer 10 and/or the apparatus 100. Applicant hereby incorporates by reference herein the teachings of Basic Business Statistics Concepts and Applications, Mark L. Berenson and David M. Levine, 6<sup>th</sup> Edition, Prentice Hall 1996.

The database 10H, in the preferred embodiment, can be a database which may include individual databases or collections of databases, with each database being designated to store any and all of the data and/or information described herein. The database 10H, or collection of databases, may be updated by each

of the respective patients, providers, payers, users, and/or intermediaries, and/or by any other third party, in real-time, and/or via dynamically linked database management techniques.

The data and/or information stored in the database 10H can also be updated by and/or dynamically linked to, various external sources, including but not limited to news services, research publications, research facilities, healthcare laboratories, providers of healthcare goods and/or services, pharmaceutical companies, research institutions, schools. The database 10H will contain any and all information deemed necessary and/or desirable for providing all of the processing and/or services and/or functions described herein. Applicant hereby incorporates by reference herein the subject matter of Fundamentals of Database Systems, by Ramez Elmasri and Shamkant B. Navathe, 2<sup>nd</sup> Ed., Addison-Wesley Publishing Company, 1994.

The data and/or information which is contained and/or stored in the database 10, as well as any of the other databases 20H, 30H, 40, and 50H, described herein can be obtained from the various patients, individuals, providers, payers, and/or intermediaries, who or which utilize and/or who or which are serviced by the present invention. For example, the respective patients, providers, payers, intermediaries, and/or other users,

could fill out questionnaires, forms, narratives, claim forms, and/or any other information medium, in written form, electronically, and/or otherwise.

Data and/or information stored in the database 10H as well as any of the other databases described herein can be updated by multiple parties. For example, a patient may provide medical history for his or her individual file, his or her medical doctor can update the medical history information for the patient upon examining and/or treating him or her. The payer may also update the file with any associated payment or payment-related information. Should the patient go to another doctor or different type of doctor, all previous information would be available for, and can be updateable by, the next doctor.

The database 10H can also contain information regarding alternate medicine techniques, herbal techniques, meditation techniques, exercise techniques, self healing, faith healing, and/or other non-medicine treatments and/or techniques.

The database 10H can also include statistical data and/or information regarding diagnoses, and/or alternate diagnoses, treatment success, treatment failure, as well as statistical data and/or information regarding misdiagnoses. The database 10H also



contains data and/or information regarding experimental treatments as well as statistical information regarding same, successes of same and failures of same.

In any and/or all of the embodiments described herein, any of the data and/or information which is or which may be stored in the database 10H, and/or any of the other databases described herein, can be utilized and/or can appear in any of the reports, diagnostic reports, treatment reports, evaluation reports, provider reports, payer reports, patient reports, training reports, and/or any other reports, described herein.

The central processing computer 10 also includes an output device 10I for output any data, information, report, etc., described herein. In the preferred embodiment, the output device 10I can be a printer, a display, a transmitter, a modem, and/or any other device which can be used to output data.

Any of the data and/or information for any of the patients, individuals, providers, payers, and/or intermediaries, can be updated by different parties and which such updated data and/or information being made available to other respective

parties so as to provide and ensure comprehensive and up-to-date healthcare and healthcare-related information.

Figure 3 illustrates the provider communication device 20, in block diagram form. The provider communication device 20, in the preferred embodiment, can be personal computer, a network computer or computer system, or any other computer or communication device, which is utilized as a provider computer 20. In the preferred embodiment, the provider communication device 20 includes a central processing unit or CPU 20A, which in the preferred embodiment, is a microprocessor. The CPU 20A may also be a microcomputer, a minicomputer, a macro-computer, and/or a mainframe computer, depending upon the application.

The provider communication device 20 also includes a random access memory device(s) 20B (RAM) and a read only memory device(s) 20C (ROM), each of which is connected to the CPU 20A, a user input device 20D, for entering data and/or commands into the provider communication device 20, which includes any one or more of a keyboard, a scanner, a user pointing device, such as, for example, a mouse, a touch pad, and/or an audio input device and/or a video input device, and/or any device, electronic and/or otherwise which can be utilized for inputting and/or entering healthcare data and/or information, for example pulse rate

monitors, blood pressure monitors, electrocardiograms, blood-sugars monitors, etc., if desired, which input device(s) are also connected to the CPU 20A.

The user input device 20D can also acquire, receive, generate and/or provide, data which can be entered by a user or individual and/or can be a device which can acquire, receive, generate and/or provide, digital data such as medical, healthcare, bio-metric, physiological, and/or any other kind of healthcare data and/or healthcare-related data. For example, a user input device 20D can be a keyboard for allowing a user to input information into the provider communication device and/or a user input device can, for example, be a heart rate monitor or EKG machine which can receive information from a patient or individual and generate a digital signal, digital data, analog data, and/or any other signal, data, and/or information, which is representative of the patient's or individual's heart rate, pulse rate, and/or cardiac activity.

The user input device 20D can also be, or can include, any one or more of, and/or any combination of, a thermometer, a digital thermometer, a stethoscope, a heart rate monitor or measurement device, a pulse rate monitor or measurement device, a blood pressure monitor or measurement device, a blood pressure

measurement device, blood analysis device or machine, a respirator, a respiration monitoring or measurement device, a dialysis machine, a dialysis device, electrocardiograph (EKG) machine or device, electrocephalograph (EEG) machine or device, electromyograph (EMG) machine or device, a magnetic resonance imaging (MRI) machine or device, X-ray machine or device, medical imaging machine or device, thermal imaging machine or device, a heart sound monitor or measurement device, a lung sound monitoring or measurement device, respiration rate monitoring or measurement device, a laparoscopic device, an arthroscopic device, a vascular testing device, a catheter device, a cardiac performance testing, monitoring, or measurement device, a pulmonary performance testing, monitoring, or measurement device, a vascular system performance monitoring or measurement device, a vascular system testing, monitoring, or measurement device, a metabolism monitoring or measurement device, a sonogram imaging device, a sonogram measurement device, a sonograph device, an optical response device, an optical response measurement device, an intravenous device, an arterial blood pressure measurement or monitoring device, a respiration rate measurement or monitoring device, an ultrasound imaging device, an ultrasound measurement device, a CAT SCAN device, an optical metabolism measurement or monitoring device, a radiotelemetric device, a doppler medical device, a mammogram device, a carbon dioxide detection or

measurement device, a carbon monoxide detection or measurement device, a transvascular impedance measurement or monitoring device, an ultrasonic imaging device, a bone conduction device, a brain function scan analyzer device, external pulse cardiac monitoring or measurement device, a fetal heart rate measurement, monitoring, or probing, device, an endotracheal cardiac monitoring device, a finger tip blood pressure monitoring device, a psychological monitoring device, a surgical instrument, a vital signs measurement device, ear pressure regulating device, phonocardiograph device, acoustic aneurysm detector device, blood oxygen detection device, esophageal probing device, ultrasonic probing device, auscultoscope, vital signs monitoring system, heart activity monitoring device, pulmonary activity monitoring device, sphygmomanometer, esophageal stethoscope, venous pressure measuring device, differential doppler device, physiological data measuring device, body tissue movement device, breathalyzer device, camera probing device, microscopic camera probing device, and/or any other bio-metric or physiological data measuring device(s) and/or data acquisition device (hereinafter referred to generally or collectively as "healthcare equipment input device", "healthcare measurement input device", or "healthcare monitoring input device").

The provider communication device 20 also includes a display device 20E for displaying data and/or information to a user or operator.

The provider communication device 20 also includes a transmitter(s) 20F, for transmitting signals and/or data and/or information to any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50 individual computer(s), which may be utilized in conjunction with the present invention. The provider communication device 20 also includes a receiver 20G, for receiving signals and/or data and/or information from any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, which may be utilized in conjunction with the present invention.

The provider communication device 20 also includes a database(s) 20H. The database 20H can contain and/or be linked to any of the data and/or information described herein as being stored in the database 10H.

The provider communication device 20 also includes an output device 20I for output any data, information, report, etc., described herein. In the preferred embodiment, the output device 20I can be a printer, a display, a transmitter, a modem, and/or any other device which can be used to output data.

Figure 4 illustrates the payer communication device 30, in block diagram form. The payer communication device 30, in the preferred embodiment, can be personal computer, a network computer or computer system, or any other computer or communication device, which is utilized as a payer computer 30. In the preferred embodiment, the payer communication device 30 includes a central processing unit or CPU 30A, which in the preferred embodiment, is a microprocessor. The CPU 30A may also be a microcomputer, a minicomputer, a macro-computer, and/or a mainframe computer, depending upon the application.

The payer communication device 30 also includes a random access memory device(s) 30B (RAM) and a read only memory device(s) 30C (ROM), each of which is connected to the CPU 30A, a user input device 30D, for entering data and/or commands into the payer communication device 30, which includes any one or more of a keyboard, a scanner, a user pointing device, such as, for example, a mouse, a touch pad, and/or an audio input device and/or a video

input device, and/or any device, electronic and/or otherwise which can be utilized for inputting and/or entering healthcare data and/or information, for example pulse rate monitors, blood pressure monitors, electro-cardiograms, blood-sugars monitors, etc., if desired, which input device(s) are also connected to the CPU 30A. The payer communication device 30 also includes a display device 30E for displaying data and/or information to a user or operator.

The payer communication device 30 also includes a transmitter(s) 30F, for transmitting signals and/or data and/or information to any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50 individual computer(s), which may be utilized in conjunction with the present invention. The payer communication device 30 also includes a receiver 30G, for receiving signals and/or data and/or information from any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, which may be utilized in conjunction with the present invention.

The payer communication device 30 also includes a



database(s) 30H. The database 30H can contain and/or be linked to any of the data and/or information described herein as being stored in the database 10H.

The payer communication device 30 also includes an output device 30I for output any data, information, report, etc., described herein. In the preferred embodiment, the output device 30I can be a printer, a display, a transmitter, a modem, and/or any other device which can be used to output data.

Figure 5 illustrates the patient communication device 40, in block diagram form. The patient communication device 40, in the preferred embodiment, can be personal computer, a network computer or computer system, or any other computer or communication device, which is utilized as a patient computer. In the preferred embodiment, the patient communication device 40 includes a central processing unit or CPU 40A, which in the preferred embodiment, is a microprocessor. The CPU 40A may also be a microcomputer, a minicomputer, a macro-computer, and/or a mainframe computer, depending upon the application.

The patient communication device 40 also includes a random access memory device(s) 40B (RAM) and a read only memory device(s) 40C (ROM), each of which is connected to the CPU 40A, a

user input device 40D, for entering data and/or commands into the patient communication device 40, which includes any one or more of a keyboard, a scanner, a user pointing device, such as, for example, a mouse, a touch pad, and/or an audio input device and/or a video input device, and/or any device, electronic and/or otherwise which can be utilized for inputting and/or entering healthcare data and/or information, for example pulse rate monitors, blood pressure monitors, electro-cardiograms, blood-sugars monitors, etc., if desired, which input device(s) are also connected to the CPU 40A.

The user input device 40D can also acquire, receive, generate and/or provide, data which can be entered by a user or individual and/or can be a device which can acquire, receive, generate and/or provide, digital data such as medical, healthcare, bio-metric, physiological, and/or any other kind of healthcare data and/or healthcare-related data. For example, a user input device 20D can be a keyboard for allowing a user to input information into the patient communication device and/or a user input device can, for example, by a heart rate monitor or EKG machine which can receive information from a patient or individual and generate a digital signal, digital data, analog data, and/or any other signal, data, and/or information, which is

representative of the patient's or individual's heart rate, pulse rate, and/or cardiac activity.

The user input device 40D can also be, or can include, any one or more of, and/or any combination of, a thermometer, a digital thermometer, a stethoscope, a heart rate monitor or measurement device, a pulse rate monitor or measurement device, a blood pressure monitor or measurement device, a blood pressure measurement device, a blood analysis device or machine, a respirator, a respiration monitoring or measurement device, a dialysis machine, a dialysis device, electrocardiograph (EKG) machine or device, electrocephalograph (EEG) machine or device, electromyograph (EMG) machine or device, a magnetic resonance imaging (MRI) machine or device, X-ray machine or device, medical imaging machine or device, thermal imaging machine or device, a heart sound monitor or measurement device, a lung sound monitoring or measurement device, respiration rate monitoring or measurement device, a laparoscopic device, an arthroscopic device, a vascular testing device, a catheter device, a cardiac performance testing, monitoring, or measurement device, a pulmonary performance testing, monitoring, or measurement device, a vascular system performance monitoring or measurement device, a vascular system testing, monitoring, or measurement device, a metabolism monitoring or measurement device, a sonogram imaging

device, a sonogram measurement device, a sonograph device, an optical response device, an optical response measurement device, an intravenous device, an arterial blood pressure measurement or monitoring device, a respiration rate measurement or monitoring device, an ultrasound imaging device, an ultrasound measurement device, a CAT SCAN device, an optical metabolism measurement or monitoring device, a radiotelemetric device, a doppler medical device, a mammogram device, a carbon dioxide detection or measurement device, a carbon monoxide detection or measurement device, a transvascular impedance measurement or monitoring device, an ultrasonic imaging device, a bone conduction device, a brain function scan analyzer device, external pulse cardiac monitoring or measurement device, a fetal heart rate measurement, monitoring, or probing, device, an endotrachial cardiac monitoring device, a finger tip blood pressure monitoring device, a psychological monitoring device, a surgical instrument, a vital signs measurement device, ear pressure regulating device, phonocardiograph device, acoustic aneurysm detector device, blood oxygen detection device, esophageal probing device, ultrasonic probing device, auscultoscope, vital signs monitoring system, heart activity monitoring device, pulmonary activity monitoring device, sphygmomanometer, esophageal stethoscope, venous pressure measuring device, differential doppler device, physiological data measuring device, body tissue movement device, breathalyzer

device, camera probing device, microscopic camera probing device, and/or any other bio-metric or physiological data measuring device(s) and/or data acquisition device data acquisition device (hereinafter referred to generally or collectively as "healthcare equipment input device", "healthcare measurement input device", or "healthcare monitoring input device").

The patient communication device 20 also includes a display device 40E for displaying data and/or information to a user or operator.

The patient communication device 40 also includes a transmitter(s) 40F, for transmitting signals and/or data and/or information to any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50 individual computer(s), which may be utilized in conjunction with the present invention. The patient communication device 40 also includes a receiver 40G, for receiving signals and/or data and/or information from any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, which may be utilized in conjunction with the present invention.

The patient communication device 40 also includes a database(s) 40H. The database 40H can contain and/or be linked to any of the data and/or information described herein as being stored in the database 10H.

The patient communication device 40 also includes an output device 40I for output any data, information, report, etc., described herein. In the preferred embodiment, the output device 40I can be a printer, a display, a transmitter, a modem, and/or any other device which can be used to output data.

Figure 6 illustrates the intermediary computer 50, in block diagram form. The intermediary computer 50, in the preferred embodiment, can be personal computer, a network computer or computer system, or any other computer or communication device, which is utilized as an intermediary computer 50. In the preferred embodiment, the intermediary computer 50 includes a central processing unit or CPU 50A, which in the preferred embodiment, is a microprocessor. The CPU 50A may also be a microcomputer, a minicomputer, a macro-computer, and/or a mainframe computer, depending upon the application.



and/or data and/or information from any one or more of the central processing computer(s) 10, the provider computer(s) 20, the payer computers(s) 30, the patient computer(s) 40, and the intermediary computer(s) 50, which may be utilized in conjunction with the present invention.

The provider communication device 50 also includes a database(s) 50H. The database 50H can contain and/or be linked to any of the data and/or information described herein as being stored in the database 10H.

The intermediary communication device 50 also includes an output device 50I for output any data, information, report, etc., described herein. In the preferred embodiment, the output device 50I can be a printer, a display, a transmitter, a modem, and/or any other device which can be used to output data.

In any and/or all of the embodiments described herein, any one of the central processing computers 10, the provider communication devices 20, the payer communication devices 30, the patient communication devices 40, and/or the intermediary communication devices 50, can include input devices (not shown) for facilitating the data entry of a patients vital signs and or other medical data such as, but not limited to, pulse rate, blood



pressure, blood-sugar level, etc., and any other data and or information which can be input into the repective computer and/or communication device and be transmitted to the central processing computer consistent with the utilization of the present invention as described herein.

The apparatus and method of the present invention can be utilized in numerous preferred embodiments in order to provide a vast array of healthcare and healthcare-related services for any one or more of the various parties described herein. While certain of the preferred embodiments may be described with regards to utilization by a particular party, it is important to note that any patient, user, provider, payer, and/or intermediary may utilize the present invention in the same, similar and/or analogous manner. For example, a preferred embodiment for determining and/or ascertaining a medical diagnosis can be described as being utilized by a treating physician as well as be utilized by a provider to verify and/or check a diagnosis as well as by a patient or other user or individual in order to perform a self-diagnosis or double check a doctors diagnosis. In the same manner, any other preferred embodiment and/or other uses of the present invention can be utilized by any of the parties described herein.

The present invention, in its various preferred embodiments can be utilized to create and maintain comprehensive patient databases which can be accessed via a network environment and/or otherwise, to perform healthcare and/or healthcare-related diagnoses, to provide healthcare and/or healthcare-related expected prognoses, to provide healthcare and/or healthcare-related treatment plans or programs, and/or to provide healthcare and/or healthcare-related treatment progress reports and/or evaluations.

The present invention can also be utilized in order to provide training and continuing education services for healthcare and/or healthcare-related professionals, to provide healthcare, healthcare-related, and/or wellness information, to provide information about healthcare and/or healthcare-related patient, providers, payers, and/or intermediaries, to provide scheduling management services for providers, to provide notification services for patients, providers, payers and/or intermediaries and/or any other parties described herein, and/or to locate providers, payers and/or intermediaries.

The present invention can also be utilized, in preferred embodiments, in order to healthcare and/or healthcare-related claim processing services, claims submissions, claim processing,

claim status checking, and claim reconciliation, claim fraud prevention, treatment evaluation, healthcare and/or healthcare insurance policy generation, management and administration, provider, payer and/or intermediary evaluation, drug and/or treatment interactivity, treatment, medication and/or organ availability and/or notification services, patient, provider, payer, intermediary, and/or third party, notification services.

The present invention can also be utilized as a clearinghouse for facilitating the offering, selling, buying, trading, and/or other commerce and/or transactions, involving healthcare and/or healthcare-related services, products and/or goods.

In any and/or all of the embodiments described herein, the various computers and/or communication devices 10, 20, 30, 40 and/or 50, can be utilized to transmit and/or to receive transmissions, information, messages, and/or notification messages and/or signals to, and/or between, the respective parties associated with the respective computers and/or communication devices. The transmission of information, messages, and/or notification messages and/or signals, in any and/or all of the embodiments described herein can be effected via any one or more of e-mail messages, telephone messages,

beeper or pager messages, physical mail delivery, electronic data transmission, and/or can be made via any other suitable and/or appropriate communication method and/or technique.

In a preferred embodiment, the present invention can be utilized in order to perform a diagnosis of a sickness, illness and/or other condition. Figures 7A and 7B illustrate a preferred embodiment method of using the present invention, in block diagram form. While the method of Figures 7A and 7B is described in the context of a medical doctor performing a diagnosis of a medical condition, the method of Figures 7A and 7B can be similarly utilized by surgeons, psychologists, psychiatrists, dentists, and/or any other healthcare provider or healthcare professional described herein. The method of Figures 7A and 7B may also be utilized by any user, patient, provider, payer, and/or intermediary in order to ascertain a diagnosis and/or in order to check on, verify, and/or ascertain the correctness of a diagnosis of another.

The operation of the apparatus 100 commences at step 700. At step 701, the provider can access the central processing computer 10 and enter data and/or information regarding the patient. At step 702, the central processing computer 10 will determine if a file and/or medical history exists for the

patient. If, at step 702, it is determined that a medical history does not exist, the central processing computer 10 will, at step 703, request that a medical history, family history and/or other information related thereto be provided by the patient or accompanying individual. At step 703, the information provided by the patient or accompanying individual will then be entered via the provider communication device 20 and transmitted to, and be stored at, the central processing computer 10. Thereafter, processing will proceed to step 704.

If, at step 702, it is determined that a patient's medical history does in fact exist, the processing will proceed to step 704. At step 704, the patient's symptoms, if any, and/or examination findings, are obtained from the patient and are transmitted from the provider communication device 20 to the central processing computer 10.

At step 704, data and/or information which can be obtained via any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D, can also be transmitted to the central processing computer 10. The data and/or information obtained via any of the described healthcare equipment input devices 20D, healthcare measurement input devices

20D, or healthcare monitoring input devices 20D, can be transmitted from the from the provider communication device 20 to the central processing computer 10.

In this manner, the data and/or information which is transmitted to the central processing computer 10, at step 704, can include provider or user entered data and/or information, which can be entered via the user input device 20D such as a keyboard, a mouse, a cardreader, or other input device which can be utilized in conjunction with a computer or a communication device, and/or can include data and/or information which can be obtained and/or acquired by any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D.

In a preferred embodiment, both provider or user entered data and/or information obtained and/or acquired by any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D, can be utilized in performing a patient diagnosis. In another preferred embodiment, only data and/or information obtained and/or acquired by any of the herein-described healthcare equipment input devices 20D, healthcare

measurement input devices 20D, or healthcare monitoring input devices 20D, can be utilized in performing a patient diagnosis. In another preferred embodiment, only provider or user entered data and/or information can be utilized in performing a patient diagnosis.

The central processing computer 10 will, at step 705 receive and process the patient symptoms, if any, examination findings, and/or any other data and/or information, in conjunction with the patient's medical history and/or other information, medical theories, principles, criteria and/or other medical information needed to make a diagnosis. At step 705, the central processing computer 10 will perform a comprehensive diagnostic evaluation of the patient's symptoms, if any, and/or the examination findings.

As described above, the diagnostic evaluation or diagnosis can be based upon both provider or user entered data and/or information and data and/or information obtained or acquired by any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D, can be based upon only data and/or information obtained and/or acquired by any of the herein-described healthcare equipment input devices 20D,

healthcare measurement input devices 20D, or healthcare monitoring input devices 20D, or can be based upon only provider or user entered data and/or information.

For example, a provider can enter patient symptom information along with patient data obtained from any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D. A diagnosis can, thereafter, be processed utilizing data obtained from both the provider and any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D.

Patient data can also be obtained solely from any of the herein-described healthcare equipment input devices 20D, healthcare measurement input devices 20D, or healthcare monitoring input devices 20D, with such patient data being utilized in order to arrive at a diagnosis. Patient data, in another preferred embodiment, can also be obtained solely from a provider or the patient himself or herself. A patient can also utilized the apparatus in conjunction with home healthcare equipment input devices, healthcare measurement input devices, or healthcare monitoring input devices.



At step 706, the central processing computer 10 will generate a diagnostic report which can include a diagnosis of the patient's condition, if needed. The diagnostic report which is generated at step 706 can, if needed, include a single diagnosis and/or a list of possible diagnoses, along with their respective probabilities of occurrence and/or statistical information corresponding thereto, which may pertain to the patient's condition. At step 707, the central processing computer 10 will then generate a treatment report which will outline and/or prescribe treatment for the single diagnosis and/or for the list of possible diagnoses, if any. The central processing computer 10, when generating the treatment report, can process same in conjunction with, and consider, possible drug interactions and/or treatment interactions.

At step 708, the central processing computer 10 will transmit the diagnostic report and/or treatment report to the provider's communication device 20 at which point the medical doctor can obtain the diagnosis or possible diagnoses, if any, and corresponding treatment plans. The medical doctor can then, at step 709, review the diagnostic report and/or treatment report and choose the a final diagnosis and/or treatment plan, if needed, to administer to the patient.

At step 710, the medical doctor will transmit the final diagnosis and treatment plan, including the prescribed treatment and/or treatment plan, if any, to the central processing computer 10. At step 711, the central processing computer 10 will then update the patient's records in the database 10H so as to include all of the data and information described as being processed and/or generated by the central processing computer 10, including, but not limited to the patient's symptoms, if any, the examination findings, the information contained in the diagnostic report and the treatment report, the final diagnosis and the prescribed treatment.

Thereafter, operation of the apparatus 100 will cease at step 712. The patient's records will then be updated and be available for the patient's next treatment and/or diagnosis.

In another preferred embodiment, the diagnostic report and/or treatment reports can be accompanied by medical information, textbook materials, laboratory materials, reference materials, video clips of any pertinent information, audio clips of any pertinent information, hyperlinks to informational sources, information regarding providers and/or facilities for obtaining treatment and/or therapy, provider and/or facility

contact information, and/or any other pertinent and/or relevant information.

In another preferred embodiment, the diagnostic report and/or treatment reports can be accompanied by health and/or wellness information which can include suggestions for health and/or wellness foods, goods, products, and/or services. The diagnostic report and/or treatment reports can also be accompanied by health and/or fitness information, diets, nutritional information, and/or any other information which may be of assistance to the patient and/or provider. The diagnostic and/or treatment reports can also contain warnings regarding misdiagnoses, warnings about treatments, information about experimental treatments, etc. The diagnostic and/or treatment reports can also contain information, statistical and/or otherwise, regarding diagnoses, misdiagnoses, treatment successes, and/or treatment failures. The diagnostic and/or treatment reports can also contain information regarding alternate medicine such as treatments regarding herbal remedies and/or treatments, meditation, self-healing, faith healing, yoga, tai chi, exercise therapy, and/or other therapies and/or therapy types.

As noted above, the method of utilizing the present invention, as described in Figures 7A and 7B, is equally applicable to, and can be utilized in the same manner, by any and/or all of the respective healthcare providers, professionals, and/or related providers. The apparatus of Figures 7A and 7B can also be utilized in a same or similar manner by any of the herein-described users, patients, healthcare providers, or healthcare payers.

The apparatus of Figures 7A and 7B can also utilize electronic signatures and/or process electronic signatures and/or electronic signature information which can correspond to any of the herein-described parties in performing any of the herein-described processing routines and/or functions.

In another preferred embodiment, the apparatus and method of the present invention can be utilized to ensure that a proper treatment and/or procedure is performed on the patient. Referring once again to Figures 7A and 7B and the above description of same, the present invention can be utilized to ensure that a subsequent treatment and/or treatments are performed as prescribed. As noted above with reference to Figure 6 and, in particular, a final diagnosis and prescribed treatment

is stored in the patient's file or records in the database 10H of the central processing computer.

When the patient seeks treatment from a subsequent medical doctor, surgeon, or other healthcare professional, the medical doctor, surgeon, or other healthcare professional, can access the central processing computer 10 at the time of treatment, access the patient's medical history and prescribed treatment plan and assess same in order to make sure that the treatment to be provided is called for in the prescribed treatment. In this manner, the present invention can be utilized in order to prevent medical and/or surgical mistakes, mishaps and/or other instances when improper treatment could occur.

It is also envisioned that the subsequent care medical doctor, surgeon, or other healthcare professional, could also re-evaluate the patient's condition and/or records and seek additional assistance and/or perform a separate and independent assessment and/or diagnosis of the patient. In any event, the present invention can provide the subsequent care medical doctor, surgeon, or other healthcare professional, with the patient's complete medical history, information, past diagnoses and/or past treatments and/or prescriptions. In this manner, a subsequent

care provider can be provided with as complete and as up to date information as possible in order to administer treatment.

For example, the present invention can be utilized in the following manner. A patient scheduled for surgery on a certain body part (i.e. left ankle) may enter the hospital. Due to a hospital clerical error, the right ankle is noted to be operated on.

Prior to the surgery, the surgeon may access the central processing computer 10, via a provider communication device 20 located in the operating room, and/or another location in the hospital, in order to verify the procedure to be performed. In response thereto, the central processing computer 10 will transmit a message that it is the left ankle which is to be operated on. Thereafter, the surgeon can investigate the situation and ensure that the correct and prescribed surgery and/or procedure is performed. Once the surgery is completed, the patient's record will be updated accordingly. While a surgical procedure is described, it is important to note that any treatment, procedure, etc., which can be performed by any healthcare professional described herein, and/or in any healthcare field described herein, can be verified in the above-described manner. In this manner, the present invention can be

utilized to pre-screen subsequent and/or follow-up treatments and/or procedures so as to prevent healthcare mistakes and/or mishaps.

The embodiment of Figures 7A and 7B can perform diagnoses by utilizing entered data and/or information and/or data and/or information which can be obtained by, acquired by, and/or measured by, any of the herein-described user input devices 20D.

In another preferred embodiment, the healthcare professional can access the central processing computer 10 via the provider communication device 20, access the patient's or client's record and input information concerning the treatment and/or procedure to be performed. Thereafter, the central processing computer 10 can process the information and transmit a message to the healthcare professional notifying the healthcare professional that the treatment and/or procedure is either the prescribed treatment or procedure or that it is not the prescribed treatment and/or procedure. The message provided by the central processing computer, to the treating healthcare professional, can also include information regarding the treatment and/or the procedure, such as instructions, steps, and/or any other accompanying information.

In any and/or all of the embodiments described herein, the central processing computer 10, in performing any processing of patient information, diagnosis information, and/or treatment information, described herein, can perform such processing in conjunction with drug and/or other treatment interaction information so as to provide an added safeguard in the diagnosis and treatment planning processes. Any and/or all processing described herein is also performed in conjunction with each patient's medical history, family history, allergic conditions information, and/or with any other information deemed important and/or essential in the individual's healthcare diagnoses and/or treatments.

In another preferred embodiment, the present invention can be utilized to perform treatment evaluations and/or treatment monitoring. In this manner, the present invention can be utilized by any of the providers, payers, patients, users, and/or intermediaries, described herein to evaluate and/or monitor treatments, provide training and/or oversight for healthcare providers and/or professionals, and/or allow payer and/or insurance companies to evaluate treatments, treatment plans, treatment progress, and/or any other evaluations and/or verifications for healthcare claims processing. In this embodiment, the present invention can be utilized so as to



safeguard against the use of incorrect and/or unconventional and/or fraudulent treatment and/or care.

Figures 8A and 8B illustrate another preferred embodiment of a method of use of the present invention, in flow diagram form. Figures 8A and 8B illustrate a preferred embodiment method of use of the present invention in order to evaluate and/or monitor treatments, treatment plans and/or the administration of healthcare. While described as being utilized by payers and/or an insurance company in evaluating and/or monitoring treatment, it is important to note that the embodiment of Figures 8A and 8B can be utilized by any provider, patient, user, including healthcare students and/or healthcare professionals-in-training, or other providers, and/or intermediary, for obtaining the information provided by the embodiment of Figures 8A and 8B and utilizing it any manner they see fit.

With reference to Figures 8A and 8B, the operation of the apparatus 100 commences at step 800. At step 801, the payer or payer's employee or agent (hereinafter, for simplicity, referred to as payer's employee) can access the central processing computer 10. At step the payer's employee can enter information concerning the patient, the treatment, and/or care, which is desired to be evaluated and/or monitored.

At step 802, the central processing computer 10 will access the database 10H and obtain patient information, patient medical history, family history, if pertinent, symptom information, provider information, diagnostic report information, treatment report information, final diagnoses information, prescribed treatment information, and/or any other information which can be relevant and/or pertinent. Any and/or all of the information described above can be stored in the database 10H from prior processing and/or use of the present invention. Other data and/or information can also be obtained from the payer's employee and/or from other third party and/or outside sources.

At step 803, the central processing computer 10 will perform a processing routine in conjunction with the above-described information in order to determine if the diagnoses and associated and/or related treatment or treatments are appropriate and/or in-line with current standards for the given healthcare field. The central processing computer 10 can also calculate and/or provide statistical information regarding any of diagnoses and/or treatments under study. At step 804, the central processing computer 10 will generate an evaluation report which will provide data and information regarding the information obtained from step 803.

The central processing computer 10 can then, at step 805, transmit the evaluation report and/or any other appropriate information, to the payer communication device 30. The central processing computer, in another preferred embodiment, can, at step 803 and/or at step 804, determine and/or provide, as part of the evaluation report, information concerning whether the diagnoses and/or treatments are considered appropriate and/or valid, and/or in-line with standards, as well as recommend that claims for the treatment(s) are valid and should be paid by the payer, and/or that the claims for the treatment(s) are invalid and should be denied.

Thereafter, at step 806, the payer or the payer's employee can review the evaluation report and take any action deemed appropriate. At step 807, the payer or payer's employee can transmit data and/or information regarding the payer's or payer employee's action and/or decision. Step 807 is an optional step and can be dispensed with if the payer or payer's employee chooses not to respond to and/or to transmit information to, the central processing computer 10. Thereafter, the operation of the apparatus will cease at step 808.

The apparatus of Figures 8A and 8B can also utilize electronic signatures and/or process electronic signatures and/or electronic signature information which can correspond to any of the herein-described parties in performing any of the herein-described processing routines and/or functions.

The present invention when utilized as described in Figures 8A and 8B, can provide treatment evaluation and/or monitoring for healthcare payers which can be utilized for performing claims processing, provider evaluations, patient evaluations, and/or any other useful and/or desired purpose. The present invention, when utilized as described in Figures 8A and 8B, can also be utilized by any provider, patient, payer, user, and/or intermediary, to evaluate and/or monitor treatments, evaluate providers, evaluate patients, evaluate payers, ascertain payers claims paying and/or processing traits, and/or for educational purposes and/or for any other useful and/or desired purpose.

In another preferred embodiment of the present invention, the apparatus and method of the present invention can be utilized to create and maintain a comprehensive patient healthcare database. Figures 9A and 9B illustrate another preferred embodiment use of the present invention, in flow diagram form.

With reference to Figures 9A and 9B, the operation of the apparatus 100 commences at step 900.

At step 901, the patient will access the central processing computer 10 and provide identification information. At step 902, the central processing computer 10 will determine whether the patient has an account and/or a file with the central processing computer and/or the service utilizing same. If, at step 902, it is determined that the patient does not have an account with the central processing computer 10, the processing will proceed to step 903 and patient will be prompted and/or asked to fill out any necessary forms and/or answer questions so as to provide a comprehensive medical history and family history, if possible.

All provided data and/or information will be stored in the database 10H and a patient account, file and/or record will be created at step 903. Thereafter, processing will proceed to step 904. If, at step 902, the patient is determined to have an account with the central processing computer, processing will proceed directly to step 904.

At step 904, the patient will provide information concerning the present healthcare request and present provider

information. At step 905, the central processing computer 10, will then determine if the present provider is a new provider. If, at step 905, it is determined that the present provider is a new provider, the central processing computer 10 will proceed to step 906 and update the patient's files or records so as to include the present provider as a new provider for the patient. Thereafter, the central processing computer 10 will proceed to step 907 and will process and store, in the database 10H and/or in the patient's files or records, any pertinent patient information, symptoms, diagnoses and/or treatments, final diagnosis and/or prescribed treatment, for the provider visit or for the event or occurrence.

If, however, at step 905, it is determined that the present provider is an existing provider for the patient, the central processing computer 10 will proceed directly to step 907 and process and store, in the database 10H and/or in the patient's files or records, any pertinent patient information, symptoms, diagnoses and/or treatments, final diagnosis and/or prescribed treatment, for the provider visit or for the event or occurrence. Thereafter, operation of the present invention will cease at step 908.

The apparatus of Figures 9A and 9B can also utilize electronic signatures and/or process electronic signatures and/or electronic signature information which can correspond to any of the herein-described parties in performing any of the herein-described processing routines and/or functions.

In this manner, the present invention can be utilized so as to create and maintain a comprehensive healthcare patient database which can be accessed by any provider, payer, intermediary, and/or other party or user, in order to access the patient's healthcare files and/or records. The comprehensive database, which in the preferred embodiment of the present invention, is stored and/or maintained in the database 10H of the central processing computer 10, can contain and/or store any of the data and/or information obtained from, and/or provided by, any and/or all of the herein-described embodiments of the present invention.

The comprehensive database provides a data and/or information source which can be accessed by any provider, from anywhere in the world, and at any time, in order to obtain information about a patient in his, her, or its care. For example, a patient traveling far from home and out of reach by his or her current healthcare provider can be treated by another

provider who can access the central processing computer 10, from any location, and at any time, and obtain up-to-date and/or comprehensive patient healthcare and/or medical and family history information, current healthcare and/or medical condition, current treatment and/or care and/or any other information which can facilitate optimal healthcare and/or medical treatment.

In the same manner, new providers can obtain existing information concerning healthcare and/or medical history, family history, current healthcare conditions and/or treatments as well as any other information from the central processing computer 10, Thereby allowing the new provider to obtain accurate information and dispensing with the need to obtain same form the patient. The information provided from the present invention can also assist the provider in diagnosing the patient. Providers can also utilize the comprehensive database in order to ascertain past and/or current providers who may be contacted for assistance and/or for insight in the treatment process.

In a similar manner, payers can utilize the comprehensive database in order to ascertain payer eligibility, the existence of pre-existing conditions and/or to obtain any other useful information.



In another preferred embodiment, the present invention can be utilized in order to find and/or to locate providers and/or payers of, and for, respectively, various healthcare treatments, healthcare services and/or healthcare goods or products and/or healthcare-related goods or products. Information regarding the various providers and/or payers, along with information regarding the services and/or goods or products they provide and/or pay for, respectively, is stored in the database 10H.

Figure 10 illustrates another preferred embodiment method of utilizing the present invention. In the embodiment of Figure 10, the present invention can be utilized by any patient, user, provider, payer, and/or intermediary, in order to locate a provider and/or a payer of healthcare and/or healthcare-related services, goods, or products. For example, assume that a patient has been recently diagnosed as needing an operation to repair his vision. The patient or his provider would need to find a doctor who specializes in performing the needed surgical procedure. The present invention can thereafter be utilized to locate a specialist for performing that function.

With reference to Figure 10, operation of the apparatus 100 commences at step 1000. At step 1001, the patient or

provider accesses that central processing computer 10 and provides information regarding the service needed. At step 1002, the central processing computer 10 will process the request and identify one or more specialists along with their backgrounds, insurance coverage accepted, fees, and/or any educational, professional experience and/or any other information about the provider. At step 1003, the central processing computer 10 can generate a provider report and transmit same to the patient or provider at step 1004. Thereafter, operation of the apparatus ceases at step 1005.

In a similar manner, the embodiment of Figure 10 can be utilized to find a facility for receiving a certain and/or desired form of care and/or for obtaining a certain procedure. In this embodiment, the facility is defined to be the provider and the present invention can be utilized as described above.

In another similar manner, the embodiment of Figure 10 can be utilized to find a payer or insurance company for providing desired coverage and/or for paying for certain treatments and/or procedures. In the case of locating payers, the method of Figure 10 can be repeated for locating payers for certain healthcare services, goods or products.

At step 1001, the patient or provider accesses that central processing computer 10 and provides information regarding the coverage needed. At step 1002, the central processing computer 10 will process the request and identify one or more payers along with information about the payer or payers. At step 1003, the central processing computer 10 can generate a payer report and transmit same to the patient or provider at step 1004. Thereafter, operation of the apparatus ceases at step 1005.

In another similar manner, the embodiment of Figure 10 can be utilized to find and/or locate supplies, body organs, blood, medications, and/or any other goods, products, and/or supplies, etc. In this embodiment, the identification, location, cost, etc., of any of the above goods, products, supplies, organs etc., can be stored in the database 10H.

With reference to Figure 10, operation of the apparatus 100 commences at step 1000. At step 1001, the patient or provider accesses that central processing computer 10 and provides information regarding the supply, body organ, blood, medication, and/or any other good, product, or supply or supplies needed.

At step 1002, the central processing computer 10 will process the request and identify the existence and/or location of the respective supply, body organ, blood, medication, and/or any other good, product, or supply or supplies, along with its location, cost and any other pertinent information. At step 1003, the central processing computer 10 can generate a report and transmit same to the patient or provider at step 1004. Thereafter, operation of the apparatus ceases at step 1005.

In another similar manner, the embodiment of Figure 10 can be utilized to find a payer or insurance company for providing desired coverage and/or for paying for certain treatments and/or procedures. In the case of locating payers, the method of Figure 10 can be repeated for locating payers for certain healthcare services, goods or products. At step 1001, the patient or provider accesses that central processing computer 10 and provides information regarding the coverage needed. At step 1002, the central processing computer 10 will process the request and identify one or more payers along with information about the payer or payers. At step 1003, the central processing computer 10 can generate a payer report and transmit same to the patient or provider at step 1004. Thereafter, operation of the apparatus ceases at step 1005.

The embodiment of Figure 10 can also be utilized by intermediaries, such as insurance brokers who need to find certain insurance companies and/or payers who meet the needs of certain patients and/or clients, and/or other individuals and/or third parties.

In another preferred embodiment of Figure 10, any patient, user, provider, payer, and/or intermediary can request to be notified of the availability of a provider, the emergence of a patient in need of a certain care, the availability of a payer or an insurance company to offer a policy or a certain policy, the availability of a healthcare facility to provide certain care, the availability of certain supplies, a body organ, a blood type, an expiration of an insurance policy (i.e. healthcare insurance, life insurance, disability insurance, etc.,) and/or the occurrence of any event which may be of interest to any of the patients, users, providers, payers, and/or intermediaries, described herein.

In this embodiment, the party requesting to be notified of the event or occurrence, whichever it may be, (hereinafter the "requesting party"), can access the central processing computer 10 via their respective communication device. Thereafter, the requesting party can enter his request, provide any conditions

attached to the request, and provide contact information. The central processing computer 10 can process the information received from the requesting party and store all pertinent information in the database 10H.

Thereafter, another party (hereinafter the "supplying party") contacts the central processing computer 10, either to enter information about the occurrence of an event and/or the availability of a service, a good or products, and/or any other herein-described and/or envisioned occurrence and/or good, product and/or service availability, or to review requests which have been previously submitted, which the supplying party may be interested in responding to.

If the entry of the supplying party can satisfy a request of a requesting party, and/or if the supplying party desires to satisfy a request of a requesting party, the central processing computer 10 will generate and/or transmit an e-mail message, a beeper or pager message, and/or a telephone call, and/or other communication to the communication device of the requesting party.

The communication or message can include information for bring the requesting party and the supplying party together to

act towards effecting and/or consummating the transaction. Thereafter, upon notification to the central processing computer by either the requesting party and/or the supplying party, or both, the central processing computer 10 can remove the request from the database 10H. In this manner, the central processing computer 10 and/or the apparatus 100 can be utilized as a clearinghouse for effecting transactions for any of the services, goods, products, and/or any other entities described herein.

In another preferred embodiment, the present invention can be utilized to schedule appointments with any of the patients, providers, payers, and/or intermediaries, described herein. In this manner, for example, can make an appointment with the provider over the communication network which services the present invention.

Figures 11A and 11B illustrate another preferred embodiment method of using the present invention, in flow diagram form. In the embodiment of Figures 11A and 11B, provider scheduling information can be stored in the database 10H. Operation of the apparatus 100 commences at step 1100. At step 1101, the patient accesses the central processing computer 10 and requests the schedule or schedules of a provider or a number of providers. At step 1102, the central processing computer 10

provides the schedule information to the patient. At step 1103, the patient can select the appointment he or she wishes to make.

At step 1104, the appointment information is transmitted to and received at the central processing computer 10. At step 1105, the central processing computer 10 will update the provider's schedule to reflect the new appointment. At step 1106, the central processing computer 10 will transmit a signal, such as an e-mail and/or other transmission and/or communication to provider communication device 20 to notify the provider and to update the providers schedule on the provider computer 20. In the preferred embodiment, the scheduling files stored on the database 10H of the central processing computer 10 and the database 20H on the provider communication device 20, and/or any portions and/or fields, or records, of same, can be dynamically linked to one another so that changes made to the schedule or schedules by either the central processing computer and/or on the provider communication device will be reflected in real-time so as to ensure that the most up-to-date schedules are available at all times.

Operation of the apparatus 100 will thereafter cease at step 1107. In another preferred embodiment, the central processing computer and/or the provider communication device can



generate and/or transmit an e-mail to the patient communication device 40 in order to confirm the appointment and/or to serve as a reminder to the patient.

In the same manner, any patient, user, provider, payer, and/or intermediary can utilize the preferred embodiment of Figures 11A and 11B in order to schedule an appointment with any other patient, user, provider, payer, and/or intermediary, described herein.

In another preferred embodiment, the present invention can be utilized by intermediaries, such as, but not limited to brokers, insurance brokers, agents, and others, in order to service their respective clients. For example, the database 10H can contain insurance policy information, conditions, premiums, insurers providing same, as well as any other useful information in servicing insured's needs. The database 10H can also contain client information, policy requirements for any of the health insurance, life insurance, and/or disability insurance, policies in force for the insured along with premiums paid and/or expiration dates.

In another preferred embodiment, a broker, for example can prepare policy quotes, compare available policies, generate

policies, and service policy claims via the information provided by the central processing computer 10 and/or the apparatus 100 of the present invention. The broker may also request to be notified, electronically and/or otherwise via a message generated and/or transmitted via the central processing computer 10, of times and/or instances when an insured's policy is up for renewal.

The broker may then utilize any of the information provided by, and/or contained in, the database 10H of the present invention in order to respond to an insured client's needs and/or requests, such as, but not limited to preparing policy quotes for comparison, finding a policy and/or policies for addressing the insured's particular needs, assisting in resolving claims issues and/or claims processing issues, and/or assisting and/or providing any other information which could allow the broker or other intermediary to provide assistance to, and/or to provide added value to its client or clients.

In this, manner, the present invention can provide a platform for allowing a broker to provide improved services to his or her insured while also providing for a more paperless working relationship.

In another preferred embodiment of the present invention, the present invention can be utilized in order to provide notification to any of the patients, providers, payers, users, and/or intermediaries. For example, a medical specialist can be electronically and/or otherwise notified if a patient is diagnosed with an illness and/or a condition which he or she specializes in treating.

As another example, a payer can be electronically and/or otherwise notified when a patient may be admitted to a hospital and/or other facility for care. The present invention can also be utilized to electronically and/or otherwise notify a provider when his or her patient has been diagnosed with an illness even when the patient may not be under the provider's care, and/or to notify a patient if a provider has become available to perform a treatment and/or a procedure on, and/or for, the patient.

The present invention can also be utilized in order to provide notification, electronically and/or otherwise, to any respective party, regarding any event, happening, and/or occurrence, which is described herein and/or which may be reasonably foreseen from the comprehensive nature of the present invention in providing comprehensive healthcare processing.

Figures 12A and 12B illustrate another preferred embodiment method of utilizing the present invention, in flow diagram form. In the preferred embodiment of Figures 12A and 12B, the present invention can provide notification to any respective party, electronically and/or otherwise, in response to the occurrence of an event, happening, and/or occurrence.

While the description of the embodiment of Figures 12A and 12B will be directed to notifying a doctor or other healthcare provider when a patient requires the provider's treatment and/or care, it is important to note that the embodiment of the Figures 12A and 12B can be utilized so as to provide notification services and/or functionality for any defined event, happening, and/or occurrence, and to any of the respective patients, users, providers, payers, and/or intermediaries, described herein.

The operation of the apparatus 100 commences at step 1200. At step 1201, the provider can access the central processing computer 10. At step 1202, the provider can select and/or enter the information concerning the notifying event, happening, and/or occurrence, and/or the conditions for notifying the provider. For example, an obstetrician can request to be notified when a pregnant patient enters a hospital in labor. At

step 1203, the central processing computer 10 processes the above information. At step 1204, the central processing computer 10, upon receiving information concerning the pregnant patient's admission to the hospital, will process the pregnant patient's information.

At step 1205, the central processing computer 10 will identify and/or ascertain that the provider's condition for notification has been met or has been triggered. Thereafter, at step 1206, the central processing computer will generate an appropriate message to notify the provider. At step 1207, the central processing computer 10 can transmit the notification message to the provider's communication device as any one or more of an e-mail, a beeper or pager message, a telephone call, and/or in any other manner. The central processing computer 10 can also transmit multiple notification messages to multiple communication devices such as a computer, a personal digital assistant, a beeper or pager and/or a telephone. Thereafter, operation of the apparatus will cease at step 1208.

In a similar manner, a payer may also request to be notified upon the admission of a patient to a hospital and/or other care facility. A patient may also request that certain providers and/or payers be notified by the present invention of

an event, happening, and/or occurrence involving the patient. There is no limit to the scenarios and/or alternate embodiments in which the present invention can be utilized in order to provide notification to any of the patients, users, providers, payers, and/or intermediaries, described herein.

In still another preferred embodiment, the present invention can be utilized to facilitate healthcare claims processing. Any of the patients, providers, payers, users, and/or intermediaries, can file claims with the respective party electronically via the present invention. The claim forms for each payer and/or other party can be accessed from the respective party's communication device, filled out and submitted electronically by the claiming party or claimant. Any and/or all submissions can be electronically dated and/or otherwise marked, the status of the claim can be provided to the claimant at any time and any interested third parties may be notified of any action taken on a claim.

Figures 13A, 13B and 13C illustrate a method of utilizing the present invention to perform claims processing services. While it is understood that any appropriate party can file claims with any party described herein, for simplicity, a preferred embodiment where providers and/or patients file claims is

described herein. The method, however, can be adapted for use by any party described herein.

With reference to Figures 13A, 13B and 13C, operation of the apparatus 100 commences at step 1300. At step 1301, the provider or patient, whichever the case may be, accesses the central processing computer 10 via the respective communication device 20 or 40. At step 1302, the provider or patient enters a request to make a claim.

At step 1303, the central processing computer 10 will record any information regarding the claim request and, thereafter, at step 1304, link the provider or patient directly to the respective payer communication device 30. At step 1305, the provider or patient can request a claim form. At 1306, the claim form will be transmitted from the payer communication device 30, via the central processing computer 10, which will record the occurrence of same, to the communication device 20 or 40 of the respective provider or patient. The provider or patient can fill out the form on the respective communication device 20 or 40 at step 1307.

At step 1308, the provider or patient transmits the completed form to the payer communication device 30 via the

central processing computer 10 which will record the occurrence of same. At step 1309, the payer will process the claim and, at step 1310, generate a claim report or statement. At step 1311, the claim report or statement is transmitted to the central processing computer 10, which can record the occurrence as well as the action taken by the payer (i.e. claim approved or denied).

Thereafter, the central processing computer 10 will, at step 1312, transmit the claim report or statement to the communication device 20 or 40, respectively, of the provider or patient. Thereafter, at step 1313, the provider or patient can provide the additional information and/or re-submit the claim form to the central processing computer. At step 1314, the central processing computer 10 will determine if the provider or patient has provided additional information and/or has decided to resubmit the claim.

If, at step 1314, it is determined that additional information has been provided and/or that the claim is to be re-submitted, the processing will proceed to step 1308 and the processing of steps 1308 through 1314 will be repeated until a resolution is reached between the parties involved. Thereafter, the operation of the apparatus 100 will cease at step 1315. If at step 1314, it is determined that no new additional information



has been submitted and/or that the claim is not to be re-submitted then the operation of the apparatus 100 will cease at step 1315

In this manner, the present invention can facilitate an expedited and/or a paperless claim process. Further, records of the transactions, such as, but not limited to claim request, claim form request and/or delivery, claim submission, claim processing, claim report or statement, claim re-submission, provision of additional information, and/or any and/or all other transactions, which occur during the claim processing procedure or process, can be recorded and maintained at the central processing computer 10 so as to provide for a third party record and/or monitoring of same.

The central processing computer 10, can notify any party described herein, as well as any third parties, regarding any event, happening, occurrence, and/or any aspect of any claim submission and/or processing activities. For example, a provider can be notified at regular interval on a payer's or payers decisions to pay for certain treatments and/or procedures. Similarly, a patient's employer can be notified regarding claim payments made by its group health insurer so as to ensure that its employees are being properly serviced and/or provided for.

Other information may similarly be provided to any appropriate requesting party described herein and/or any qualified and/or appropriate third party. Notification can be provided to any appropriate party, via any of the communication methods and/or techniques described herein, and can be for, and/or include, any pertinent information.

The apparatus of Figures 13A and 13B can also utilize electronic signatures and/or process electronic signatures and/or electronic signature information which can correspond to any of the herein-described parties in performing any of the herein-described processing routines and/or functions.

In another preferred embodiment, the present invention can provide for automatic claim submission via the central processing computer 10 once a final diagnosis and treatment has been prescribed by a provider and/or upon the occurrence of an examination and/or the administration of a treatment. Figures 14A and 14B illustrate another preferred embodiment method of utilizing the present invention.

With reference to Figures 14A and 14B, operation of the apparatus 100 commences at step 1400. At step 1401, the patient's symptoms, if any, and/or examination findings are

obtained from the patient and transmitted from the provider communication device 20 to the central processing computer 10. The central processing computer 10 will, at step 1402 receive and process the patient symptoms, if any, and/or the examination findings, in conjunction with the patient's medical history and/or other information, medical theories, principles, criteria and/or other medical information needed to make a diagnosis. At step 1403, the central processing computer 10 will perform a comprehensive diagnostic evaluation of the patient's symptoms, if any, and/or the examination findings.

At step 1404, the central processing computer 10 will generate a diagnostic report which can include a diagnosis of the patient's condition. The diagnostic report which is generated at step 1404 can, if needed, include a single diagnosis and/or a list of possible diagnoses along with their respective probabilities, which may pertain to the patient's condition. At step 1405, the central processing computer 10 can then generate, if needed, a treatment report which will outline and/or prescribe treatment for the single diagnosis and/or for the list of possible diagnoses. The central processing computer 10, when generating the treatment report, can, if needed, process same in conjunction with, and consider, possible drug interactions and/or treatment interactions.

At step 1406, the central processing computer 10 will transmit the diagnostic report and/or treatment report to the provider's communication device 20 at which point the medical doctor can obtain the diagnosis or possible diagnoses and corresponding treatment plans, if any. The medical doctor can then review the diagnostic report and/or treatment report and choose a final diagnosis and/or treatment plan to administer to the patient. At step 1407, the medical doctor will transmit the final diagnosis and treatment plan, including the prescribed treatment and/or treatment plan, to the central processing computer 10. At step 1408, the central processing computer will then update the patient's records in the database 10H so as to include all of the data and information described as being processed and/or generated by the central processing computer 10, including, but not limited to the patient's symptoms, the information contained in the diagnostic report and the treatment report, the final diagnosis and the prescribed treatment.

Thereafter, at step 1409, the central processing computer 10 will generate a claim form which can meet the formal claim submission requirements of the patient's payer or insurance company. At step 1410, the claim form will be submitted by the central processing computer 10 to the respective payer computer

30. At step 1411, any and/or all pertinent information regarding the claim submission, the patient, the provider visit, and/or any diagnoses and/or treatments considered, the final diagnosis and/or the prescribed treatment, can be stored and the patient's records will then be updated and be available for the patient's next treatment and/or diagnosis.

The operation of the apparatus 100 will then cease at step 1412. In this manner, the present invention can provide for the automatic and/or for the programmed submission of healthcare claims, claim forms, claim requests, benefit requests, etc., upon the conclusion of a provider's service, consultation, treatment, procedure, and/or any other event which triggers coverage under a healthcare insurance policy and/or a payer's liability to pay for services and/or treatments.

In the embodiment of Figures 14A and 14B, as well as any and/or all of the other embodiments described herein, the present invention can utilize and/or process electronic signatures in order to effectuate and/or process any of the respective transactions which are described as taking place between, and/or which can transpire involving, any of the respective parties described herein. Applicant hereby incorporates by reference

herein the subject matter and teachings of Applied Cryptography,  
Second Edition, Bruce Schneier, Wiley, 1996.

The present invention can also be utilized, in the manner described above, in connection with claiming healthcare insurance benefits, to claim disability insurance benefits and/or life insurance benefits.

In another preferred embodiment, the apparatus 100 can administer and/or maintain financial accounts for, and/or on behalf of, any of the patients, users, providers, payers, and/or intermediaries, described herein. In this manner, any of the parties described herein as utilizing the services of the apparatus 100, and/or the central processing computer 10, can have all financial transaction managed and/or monitored by the central processing computer 10. In the preferred embodiment, the financial accounts can be conventional savings accounts, checking account, credit accounts, debit accounts, electronic money accounts, digital money accounts, etc., and/or any other appropriate account(s).

In the preferred embodiment, any of the respective parties may select to have the central processing computer 10 administer any financial transactions on their behalf. For

example, a payer may deposit a sum of money which can be earmarked for payment of healthcare provider services. A provider may open an account and deposit a sum of money to pay any vendor bills. The provider may also open an account to receive payment from payers and/or patients for services rendered. Each time a financial transaction is to occur, such as, for example, the payment from a payer to a provider resulting from a patient's claim, the central processing computer 10 will transfer funds (and/or deduct funds) from the payer's account and deposit the funds (and/or add the funds) to the providers account.

Notwithstanding the examples provided above, the central processing computer 10 can effectuate any type of financial transaction(s) for, between, and/or on behalf of, any of the parties described herein. Further, the apparatus 100 and/or the central processing computer 10 can process electronic signatures which can be associated with and/or which can correspond to any of the respective parties to a transaction.

The central processing computer 10, in the preferred embodiment, can maintain detailed records of any and/or all of such transfer and/or transactions and provide periodic account statements to the respective parties maintaining accounts with the central processing computer 10. In this manner, the present invention can provide an apparatus and a method for maintaining

financial accounts, effecting financial transactions, and providing accounting and/or other notification services, for, and/or on behalf, any of the parties described herein.

In another preferred embodiment, the apparatus and method of the present can be utilized as healthcare training simulator for any of the providers, healthcare providers, healthcare professionals, and/or other providers described herein. The present invention can also be utilized by any user and/or individual wishing to learn about a certain healthcare field or topic. The present invention can be utilized to provide formal training, supplemental training, informal training, continuing education training, and/or any other training.

Figures 15A and 15B illustrates another preferred embodiment method for utilizing the present invention, in flow diagram form. The operation of the apparatus commences at step 1500. At step 1501, the individual utilizing the training simulator (referred to hereinafter as "the user") who could be any provider, student provider, and/or any other individual and/or party described herein, can access the central processing computer 10 via an appropriate computer or communication device. At step 1502, the user can select the training program which he or she wishes to train from. At step 1503, the central



processing computer 10 will transmit the training scenario and/or information, including the symptoms and/or conditions of a hypothetical patient. The training scenario can include any one or more of text information, a video tapped file or video clip, audio information, and/or any other multimedia information.

At step 1504, the user can enter his or her diagnosis and prescribed treatment and/or treatments for the presented scenario and transmit same to the central processing computer 10. At step 1505, the user's diagnosis and prescribed treatment can be applied to the scenario. At step 1506, the central processing computer 10 will compare the diagnosis against any diagnosis or diagnoses which are known to be correct and/or against any scientific and/or statistical norms. At step 1506, the central processing computer 10 will apply the prescribed treatment or treatments to the hypothetical patient and compute a revised set of symptoms and/or conditions which can result from the applied treatment and/or treatments. Once again, statistical information can be utilized to arrive at a realistic response to the treatment and/or treatments. The user's diagnosis and prescribed treatment, as well as information regarding the correctness and/or viability of same can be recorded by the central processing computer 10 at step 1506.

At step 1507, the central processing computer 10 will transmit a response to the user's diagnosis and prescribed treatment. The response can include the patient's response to the prescribed treatment, and/or an evaluation of the diagnosis and prescribed treatment or treatments. The response can also include training materials, which can include any one or more of text information, video information, and/or audio information. At step 1508, the user can review the material and/or information contained in the response and can decide whether he or she wishes to continue the training simulation. At step 1509, the user will transmit a response to the central processing computer 10 which contains an instruction to either continue the simulation, in which case the user's response will also include a revised diagnosis and prescribed treatment or treatments, or to terminate the training simulation.

At step 1510, the central processing computer 10 will receive and process the user's response provided at step 1509. At step 1511, the central processing computer 10 will determine whether the user desires to continue the simulation or whether the user desires to terminate the simulation. If, at step 1511, it is determined that the user desires to continue the training simulation, the operation of the central processing computer 10 returns to step 1505 and the above-described process will be

repeated from step 1505. If, however, it is determined that the user desires to terminate the training simulation the operation of the apparatus 100 will cease at step 1512. User responses, including diagnostic and treatment decisions, and/or performance, can be recorded and/or can be stored and, thereafter the information can be utilized to evaluate the user and/or for comparing the user's progress and/or improvements, as well as aptitude and skills, in the pertinent field of training, and/or the information can be utilized for any other useful purpose.

In this manner the apparatus and method of the present invention can be utilized to provide an interactive healthcare training simulator which can be utilized for training in any and/or all of the fields of medicine, surgery, psychiatry, psychology, psychotherapy, dentistry, oral surgery, nutrition, health and fitness, and/or in any other healthcare and/or healthcare -related field.

Data and/or information collected and/or stored by the apparatus 100, which relates to symptoms and/or conditions, as well as responses to treatments, can be utilized in order to present realistic and confidential training scenarios. In this manner, the present invention can be utilized to compile a vast amount of information relating to the various fields of

healthcare. The information can then be utilized to provide realistic training for providers and/or student providers. In this manner, the present invention can utilize information obtained from other preferred embodiments in order to provide simulated training scenarios.

In any and/or all of the embodiments described herein, any patient, provider, payer, user, and/or intermediary can access any one or more of the central processing computer(s) 10, the providers communication devices (20), the payer communication devices 30, the patient communication devices 40, and/or the intermediate communication devices 50, via any one or more of the said computers and/or communication devices 10, 20, 30, 40, and/or 50, as well as via any computer and/or communication device. In this manner, any of the herein-described parties can access the present invention from any computer and/or communication device. Public kiosks with links to any of the computers and/or communication devices 10, 20, 30, 40, and/or 50, can also be utilized to access and utilize the present invention and/or any of the computers and/or communication devices described herein.

In any and/or all of the embodiments described herein, access to any and/or all of the data, information, records.

files, etc., which is stored in any of the databases 10H, 20H, 30H, 40H, and/or 50H, can be restricted to preserve the security and confidentiality of same. Any of the patients, users, providers, payers, and/or intermediaries, can be provided with identification and/or other cards with any and/or all pertinent data regarding the respective individual and/or party provided on the card.

The identification card, in the preferred embodiment can contain a magnetic strip for storing any and/or all pertinent information, a "smart card" for storing information, and/or a bar code or bard codes for storing identification information as well as any other information described herein as being pertinent to the respective patient, user, provider, payer, and/or intermediary.

Each of the central processing computer(s) 10, the providers communication devices 20, the payer communication devices 30, the patient communication devices 40, and/or the intermediate communication devices 50, as well as any other computer and/or communication device, can include suitable devices for reading, scanning, and/or obtaining information which may be stored on the identification card. In this manner, access

to the present invention, and the respective use thereof, can be facilitated by the above-described identification card(s).

In another preferred embodiment, as well as in any of the embodiments described herein, intelligent agents, software agents, mobile agents, and/or related technologies, can be utilized in conjunction with the present invention. The respective intelligent agent(s), software agent(s), mobile agent(s), (hereinafter referred to collectively as "intelligent agent" or "intelligent agents") can be programmed and/or designed to act on behalf of the respective patients, users, providers, payers, and/or intermediaries, so as to act on behalf of the respective party as well as to perform any of processing functions and/or other functions described herein.

The intelligent agent can act on behalf of the respective party in various related interactions and/or other activities which are described as being performed herein and/or which may be incidental and/or related thereto. Therefore, the present invention also provides an agent-based apparatus and method for providing healthcare information and/or healthcare-related information.

Applicant hereby incorporates by reference herein the subject matter of the Agent Sourcebook, A Complete Guide to Desktop, Internet and Intranet Agents, by Alper Caglayan and Colin Harrison, Wiley Computer Publishing, 1997. Applicant also incorporates by reference herein the subject matter of Cool Intelligent Agents For The Net, by Leslie L. Lesnick with Ralph E. Moore, IDG Books Worldwide, Inc. 1997.

The apparatus of the present invention, in any and/or all of the embodiments described herein, can also be programmed to be self-activating and/or activated automatically.

The apparatus of the present invention can also be programmed in order to automatically generate and/or transmit any of the e-mails, electronic message transmissions, electronic notification transmissions, and/or any of the communications, which are described herein, between any of the parties which utilize the present invention.

The present invention, in any and/or all of the herein-described embodiments, can utilize electronic commerce technologies and security methods, techniques and technologies, as described and as set forth in Electronic Commerce Technical, Business, and Legal Issues, Nabil R. Adam, et al. Prentice Hall,

1999 and Web Security & Commerce, Simson Garfinkel with Gene Spafford, O'Reilly 1997, the subject matter of which are hereby incorporated by reference herein.

The communications networks and/or systems on, or over, which the present invention may be utilized, can include any one or combination of telecommunication networks or systems, satellite communication networks or systems, radio communication networks or systems, digital communication networks or systems, digital satellite communication networks or systems, personal communications services networks or systems, cable television networks or systems, broadband communication networks or systems, low earth orbiting satellite (LEOs) networks or systems, wireless communication networks or systems, wireless Internet networks or systems, wireless World Wide Web networks or systems, as well as in, or on any internets and/or intranets, the Internet, the World Wide Web, and any other suitable communication network or system.

The data and/or information, described as being stored in the database 10H and/or in any of the other databases described herein, can be continuously updated so as to store the latest values for the data and/or information and can be stored and be made available for future processing routines.



Any and/or all of the data and/or information described herein, which is stored in the database 10H, or in the collection of databases, can be linked via relational database techniques and/or via any appropriate database management techniques. The data and/or information, in the preferred embodiments, can be updated via inputs from any of the computers and/or communication devices 10, 20, 30, 40, and/or 50, and/or external computers or communication devices, described herein, in real-time, and/or via dynamically linked database management techniques. The above-described updates can also be provided from other information sources via the communication network.

The data and/or information which is stored in the database 10H and/or which may be otherwise utilized with, and/or in conjunction with, the apparatus and method of the present invention, can be linked via any suitable data linking techniques such as, for example, dynamically linked lists (DLLs), linked lists, and object links embedded (OLE's). Any suitable database management technique(s) may also be utilized in conjunction with the present invention.

The present invention provides an apparatus and a method for providing comprehensive information in the healthcare fields and/or healthcare-related fields. The present invention also

provides valuable services to the various parties who seek, provide, pay for, administer, and/or monitor healthcare services, goods and/or products as well as healthcare-related services, goods, and/or products.

The present invention can provide comprehensive and accurate information to any of the parties described herein so as to facilitate an improved healthcare system which can provide up-to-date patient, provider, payer, and/or intermediary, information. The present invention, by facilitating the creation and maintenance of a comprehensive database of information, which can be accessed on a global basis, at any time of day or night, and from any location, can provide patients, providers, payers, and/or intermediaries, with information which can improve healthcare treatments, reduce the likelihood of errors in diagnoses and/or prescribed treatments, reduce healthcare costs, reduce the likelihood of incorrect and/or fraudulent care, and can provide for a healthcare system which is characterized by an improved quality of care and cost efficiency.

In addition to any and/or all of the preferred embodiments described herein, the present invention can also be utilized in other preferred embodiments so as to incorporate, so as to improve upon, and/or so as to utilize, various teachings of

the prior art. In this regard, Applicant hereby incorporates by reference herein the subject matter of the following U.S.

Patents: U.S Patent No. 5,988,851 which teaches a medical treatment and or diagnostic system; U.S. Patent No. 5,974,124 which teaches a methods and system aiding medical diagnosis and treatment; U.S. Patent No. 5,961,448 which teaches a virtual medical instrument for performing medical diagnostic testing on patients; U.S. Patent No. 5,957,854 which teaches a wireless medical diagnosis and monitoring equipment; U.S. Patent No. 5,954,641 which teaches a method, apparatus and operating system for managing the administration of medication and medical treatment regimens; U.S. Patent No. 5,935,060 which teaches a computerized medical diagnostic and treatment advice system including list based processing; U.S. Patent No. 5,910,107 which teaches a computerized medical diagnostic and treatment advice method; U.S. Patent No. 5,899,857 which teaches a medical treatment method with scanner input; U.S. Patent No. 5,895,354 which teaches an integrated medical diagnostic center; U.S. Patent No. 5,878,746 which teaches a computerized medical diagnostic system; U.S. Patent No. 5,876,351 which teaches a portable modular diagnostic medical device; U.S. Patent No. 5,868,669 which teaches a computerized medical diagnostic and treatment advice system; U.S. Patent No. 5,862,803 which teaches a wireless medical diagnosis and monitoring system; U.S. Patent

No. 5,839,438 which teaches a computer-based neural network system and method for medical diagnosis and interpretation; U.S. Patent No. 5,807,256 which teaches a medical information processing system for supporting diagnosis; U.S. Patent No. 5,807,246 which a display device in medical examination and treatment system; U.S. Patent No. 5,801,755 which teaches an interactive communication system for medical treatment of remotely located patients; U.S. Patent No. 5,797,901 which teaches an automatic activation system for a medical diagnostic monitoring and surgical apparatus and method therefore; U.S. Patent No. 5,779,634 which teaches a medical information processing system for supporting diagnosis; U.S. Patent No. 5,776,057 which teaches a virtual medical instrument for performing medical diagnostic testing on patients; U.S. Patent No. 5,761,334 which teaches an apparatus for computer aided diagnosis of medical images having abnormal patterns; U.S. Patent No. 5,724,968 which teaches a computerized medical diagnostic system including meta function; U.S. Patent No. 5,666,953 which teaches a system and associated method for providing information for use in forming medical diagnosis; U.S. Patent No. 5,660,176 which teaches a computerized medical diagnostic and treatment advice system; U.S. Patent No. 5,594,638 which teaches a computerized medical diagnostic system including re-enter function and sensitivity factors; U.S. Patent No. 5,583,758 which

teaches a health care management system for managing medical treatments and comparing user-proposed and recommended resources required for treatment; U.S. Patent No. 5,551,436 which teaches a medical diagnosis system; U.S. Patent No. 5,544,651 which teaches a medical system and associated method for automatic treatment; U.S. Patent No. 5,437,278 which teaches medical diagnosis system and method; U.S. Patent No. 5,415,167 which teaches a medical system and associated method for automatic diagnosis and treatment; U.S. Patent No. 5,360,005 which teaches a medical diagnosis device for sensing cardiac activity and blood flow; U.S. Patent No. 5,331,550 which teaches an application of neural networks as an aid in medical diagnosis and general anomaly detection; U.S. Patent No. 5,324,077 which teaches a medical data draft for tracking and evaluating medical treatment; U.S. Patent No. 5,305,748 which teaches a medical diagnostic system and related method; U.S. Patent No. 5,279,294 which teaches a medical diagnostic system; U.S. Patent No. 5,255,187 which teaches a computer aided medical diagnostic method and apparatus; U.S. Patent No. 5,235,510 which teaches a computer-aided diagnosis system for medical use; U.S. Patent No. 5,090,417 which teaches a medical diagnostic apparatus; U.S. Patent No. 4,733,354 which teaches a method and apparatus for automated medical diagnosis using decision tree analysis; U.S. Patent No. 4,731,725 which teaches a data processing system which suggests a pattern of

medical tests to reduce the number of tests necessary to confirm or deny a diagnosis; U.S. Patent No. 4,674,512 which teaches a medical electrode for monitoring and diagnostic use; U.S. Patent No. 4,674,108 which teaches a digital X-ray medical diagnostic apparatus; U.S. Patent No. 4,641,659 which teaches a medical diagnostic microwave scanning apparatus; U.S. Patent No. 4,290,114 which teaches a medical diagnostic computer; U.S. Patent No. 4,251,850 which teaches a control desk for medical apparatus, in particular for an x-ray diagnostic apparatus; U.S. Patent No. 4,242,911 which teaches an ultrasonic medical diagnostic apparatus and method; U.S. Patent No. 4,235,454 which teaches a stabilization system for a medical diagnostic device; U.S. Patent No. 4,209,022 which teaches an echography apparatus for medical diagnosis, using a multiple-element probe; U.S. Patent No. 4,170,987 which teaches a medical diagnosis system and method with multispectral imaging; U.S. Patent No. 4,110,723 which teaches an ultrasonic apparatus for medical diagnosis; and U.S. Patent No. 3,978,850 which teaches medical diagnostic instruments.

While the present invention has been described and illustrated in various preferred and alternate embodiments, such descriptions are merely illustrative of the present invention and are not to be construed to be limitations thereof. In this

regard, the present invention encompasses all modifications, variations and/or alternate embodiments, with the scope of the present invention being limited only by the claims which follow.